

**REFERENCE
MATERIALS
FOR VALUING
AGRICULTURAL
LAND FOR
MARCH 1, 2007**

BASE RATE \$1,140

**General Notes for the Agricultural Land Market
Value in Use for March 1, 2007 Rate of \$1,140**

December, 2006

History:

The Real Property Assessment Guidelines contain a section on valuing agricultural land based on its value in use. A summary of our calculations can be found in Chapter 2, Page 100 of these guidelines, in Table 2-18. For the 2002 reassessment, the base rate for agricultural land calculated to be \$1,050. Pursuant to 50 IAC 21-6-1(a), the department issued the annual rate for 3/1/05 to be \$880. In the 2005 legislative session, SEA 327 was passed. This bill contained a non-code provision that set the base rate for agricultural land for both March 1, 2005 and March 1, 2006 at \$880. SEA 327 also contained language for March 1, 2007 which instructed us to adjust our methodology from a four year rolling average to a six year rolling average.

Table 2-18 – Years:

For March 1, 2005, our agency utilized a four-year rolling average for the years of 1999, 2000, 2001, & 2002. For March 1, 2007, this was changed to a six year rolling average per SEA 327 (IC 6-1.1-4-4.5(e)). The six years used were 1999, 2000, 2001, 2002, 2003, & 2004.

Table 2-18 – Net Income from Cash Rents:

Since agricultural land in Indiana is nearly evenly divided between cash rent and owner-occupied production, our agency used an average of both types of income in our calculation.

The data for cash rents came from three Purdue Agricultural Economics Reports (PAER). For the 1999 & 2000 rents, go to Table 2 of Page 3 of the September of 2000 report. For the 2001 & 2002 rents, go to Table 2 of Page 3 of the August of 2002 report. For the 2003 & 2004 rents, go to Table 2 of Page 3 of the August of 2004 report. From these tables, we used the statewide average for average soil.

There was an adjustment to these amounts to reduce the rents for property taxes paid on the land. This adjustment was based on a study conducted by us.

Table 2-18 – Net Income from Operating:

This income represents the profits from the owner-occupied production of crops on agricultural land.

The foundation for the calculations that our agency adopted comes from Table 1 of the June 24, 1999 Doster/Huie report.

Doster/Huie Report – Table 1-Years:

This report used the years of 1996, 1997, 1998, & 1999. The year of 1999 was removed from our 2002 calculations since our calculations were based on January 1, 1999. Information for 1995 was obtained and added to our calculations. (Also note the date of June 24, 1999 for the report which means that six months of data had been estimated.)

Doster/Huie Report – Table 1-Yields:

The yields in this report were obtained from the Indiana Agricultural Statistics Service (IASS) for both corn and soybeans. The IASS publishes these statistics on an annual basis. Yield information for these four years can be found in the 1999-2000 publication for corn on page 31 in the Final Yield per Acre column of the Crop Summary section and on page 32 for soybeans.

Doster/Huie Report – Table 1-Prices:

The prices used in this report were for the month of November. They can found on page 82 of the IASS publication. Note: Our agency made an adjustment to this part of the calculation because the majority of the grain harvested in Indiana is not sold in November but throughout the year. This adjustment will be discussed later.

Doster/Huie Report – Table 1-Sales:

Yields for each type of crop (corn/soybeans) multiplied by the Price per Bushel for each type of crop equals Sales.

Doster/Huie Report – Table 1-Less Variable Costs:

This information can be found in the Purdue Crop Guide. This guide is an annual publication (ID-166). The dollar amount for each crop type can be found in section titled “Estimated XXXX (year) Per Acre Production Costs in the column for Corn/Soybean Rotation for Average Soil. See the line for “Total direct cost per acre at harvest”. The costs include labor, seed, fertilizer, chemicals, machinery repairs, and fuel.

Doster/Huie Report – Table 1-Crop Contribution Margin:
Sales less Variable Costs equal Crop Contribution Margin for each type of crop (corn/soybeans).

Doster/Huie Report – Table 1-Plus Government Payment:
The publication adds government payments as a source of additional revenue for the land. This amount for each year was estimated by the authors of the publication.

Doster/Huie Report – Table 1-Total Contribution Margin:
This number represents the average of the Crop Contribution Margin for corn and soybeans plus one-half (1/2) of the amount for the government payment. (The sum of the three numbers divided by two.)

Doster/Huie Report – Table 1-Less Overhead:
The overhead expense for machinery, drying/handling, & family/hired labor can be found on the Purdue Crop Guide (ID-166). The dollar amount for each crop type can be found in section titled “Estimated XXXX (year) Per Acre Production Costs in the column for Corn/Soybean Rotation for Average Soil. See the lines for “Indirect charges per acre”.

Doster/Huie Report – Table 1-Real Estate Tax:
A deduction of \$10 for real estate taxes was estimated by the authors.

Doster/Huie Report – Table 1-Income:
Total Contribution Margin less the Overhead Expenses of machinery, drying/handling, labor, & real estate taxes equals Income.

Doster/Huie Report – Table 1-Estimated Land Value:
The authors of the paper then averaged the four years (1996 – 1999) income and divided it by a 1999 interest rate to arrive at an Estimated Land Value of \$971.

Table 2-18 – Net Income from Operating:
This income represents the profits from the owner-occupied production of crops on agricultural land. While the foundation for the calculations that our agency adopted comes from Table 1 of the June 24, 1999 Doster/Huie report, we did make some alterations to it.

Adjustments Made To The Doster/Huie Report By Our Department:

Years:

We added the statistics for 1995 which were available and deleted the estimates for 1999 since interest rates and income data were not available. For the calculation for 3/1/05, we began with 1999.

Price:

We added two averages to the Doster/Huie report since this report used only November prices. Since only a small portion of Indiana's grain is sold in November, we developed two annual averages for the calculation. The first average was the calendar year average of the grain prices which are published in the IASS book. The second average was the market year average. This average is calculated by the IASS and is a weighted average that is based on the end of the month grain price and the percentage of the total grain harvested that was sold that month.

Interest Rate:

Instead of using the 1999 St. Paul Farm Credit Bank interest rate, we chose to use the quarterly farm loan rates published by the Federal Reserve Bank of Chicago. The FRBC publishes an agricultural newsletter on a quarterly basis called the "AgLetter". This newsletter provides interest rates on farm loans for operating loans, feeder cattle, and real estate. We average the interest rates for the operating loans and real estate categories. A study was conducted on different sources of interest rates between Purdue Agricultural Economics Reports, the St. Paul Farm Credit Bank, and the Federal Reserve Bank of Chicago. The study found that the rates varied from year to year but when averaged out over the four year period were comparable.

SUMMARY:

When comparing the data compiled to calculate the \$880 base rate for March 1, 2005 to the data compiled to calculate the \$1,140 base rate for March 1, 2007, the main reasons for the increase can easily be identified. Interest rates dropped from 8.77% in 1999 to 6.35% in 2004. Yields for corn increased from 132 bushels in 1999 to 168 bushels in 2004 and yields for soybeans increased from 39 bushels in 1999 to 52 bushels in 2004. Prices for corn increased from \$2.11 in 1999 to \$2.53 in 2004 (market year average) and prices for soybeans increased from \$5.05 in 1999 to \$7.67 in 2004 (market year average).

Valuing Agricultural Land

The agricultural land assessment formula involves the identification of agricultural tracts using data from detailed soil maps, aerial photography, and local plat maps. Each variable in the land assessment formula is measured using appropriate devices to determine its size and effect on the parcel's assessment. Uniformity is maintained in the assessment of agricultural land through the proper use of soil maps, interpreted data, and unit values.

In order to apply the agricultural land assessment formula, you need to understand the following topics, which are discussed in the sections below:

- agricultural land base rate values
- assessment of agricultural land
- units of measurement for agricultural land
- classification of agricultural land into land use types
- use of soil maps
- calculating the soil productivity index
- valuation of strip mined agricultural land
- valuation of oil and gas interests

The rest of the chapter provides instructions for completing the "Land Data and Computations" section of the agricultural property record card.

Agricultural Land Base Rate Value

The 2002 general reassessment agricultural land value utilizes the land's current market value in use, which is based on the productive capacity of the land, regardless of the land's potential or highest and best use. The most frequently used valuation method for use-value assessment is the income capitalization approach. In this approach, use-value is based on the residual or net income that will accrue to the land from agricultural production.

As illustrated in the following equation, the market value in use of agricultural land is calculated by dividing the net income of each acre by the appropriate capitalization rate.

$$\text{Market value in use} = \text{Net Income} \div \text{Capitalization Rate}$$

The net income of agricultural land can be based on either the net operating income or the net cash rent. Net operating income is the gross income received from the sale of crops less the variable costs (i.e. seed and fertilizer) and fixed costs (i.e. machinery, labor, property taxes) of producing crops. The net cash rent income is the gross cash rent of an acre of farmland less the property taxes on the acre. Both methods assume the net income will continue to be earned into perpetuity.

The capitalization rate converts the net income into an estimate of value. The capitalization rate reflects, in percentage terms, the annual income relative to the value of an asset; in this case agricultural land. Conceptually, this capitalization

rate incorporates the required returns to various forms of capital, associated risks, and the anticipated changes over time.

Since agricultural land in Indiana is nearly evenly divided between cash rent and owner-occupied production, the State Board of Tax Commissioners utilized a four-year rolling average (1995 to 1998) of both methods in determining the market value in use of agricultural land. The capitalization rate applied to both types of net income was based on the annual average interest rate on agricultural real estate and operating loans in Indiana for this same period. The table below summarizes the data used in developing the average market value in use.

Table 2-18. Agricultural Land market value in use

YEAR	NET INCOMES		CAP. RATE	MARKET VALUE IN USE		Average
	Cash Rent	Operating		Cash Rent	Operating	
1995	\$88	\$56	9.92%	\$887	\$565	\$ 726
1996	\$94	\$131	9.29%	\$1012	\$1410	\$1,211
1997	\$100	\$124	9.31%	\$1074	\$1332	\$1,203
1998	\$102	\$91	9.10%	\$1121	\$1000	\$1,060
				Average Market Value in Use =		\$1,050

The statewide agricultural land base rate value for the 2002 general reassessment will be the average market value in use calculated as shown above or \$1,050 per acre.

Assessing Agricultural Land

The agricultural land assessment formula involves identifying agricultural tracts using data from a detailed soil map, aerial photography, and local plat maps. Each variable of the land assessment formula is measured using various devices to determine its size and effect on the parcel's assessment. The proper use of the soil maps, interpreted data, and unit values results in greater uniformity in the assessment process of agricultural lands. Some commercial and industrial zoned acreage tracts devote a portion of the parcel to an agricultural use. The assessor classifies these parcels as either commercial or industrial. However, the portion of land devoted to agricultural use should be valued using the agricultural land assessment formula. Portions not used for agricultural purposes would be valued using the commercial and industrial acreage guidelines described in this chapter.

Converting Units of Measurement for Agricultural Land

Figure 2-23 shows the units of measurement commonly used to measure agricultural land. Table 2-19 describes equivalencies for these units of measurement.

STATE OF INDIANA

DEPARTMENT OF LOCAL GOVERNMENT FINANCE
PHONE (317) 232-3777
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INDIANA GOVERNMENT CENTER NORTH
100 NORTH SENATE AVENUE N1058(B)
INDIANAPOLIS, IN 46204

Certification of Agricultural Land Base Rate Value for Assessment Year 2007

Pursuant to 50 IAC 21-6-1(a), the Department of Local Government Finance will annually issue the agricultural land base rate to be applied for the upcoming March 1 assessment date. This certification serves to notify assessing officials of the agricultural base rate to be used for the March 1, 2007 assessment date.

The 2007 assessment year agricultural land value utilizes the land's current market value in use, which is based on the productive capacity of the land, regardless of the land's potential or highest and best use. The most frequently used valuation method for use-value assessment is the income capitalization approach. In this approach, use-value is based on the residual or net income that will accrue to the land from agricultural production.

As illustrated in the following equation, the market value in use of agricultural land is calculated by dividing the net income of each acre by the appropriate capitalization rate.

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The net income of agricultural land can be based on either the net operating income or the net cash rent. Net operating income is the gross income received from the sale of crops less the variable costs (i.e. seed and fertilizer) and fixed costs (i.e. machinery, labor, property taxes) of producing crops. The net cash rent income is the gross cash rent of an acre of farmland less the property taxes on the acre. Both methods assume the net income will continue to be earned into perpetuity.

The capitalization rate converts the net income into an estimate of value. The capitalization rate reflects, in percentage terms, the annual income relative to the value of an asset; in this case agricultural land. Conceptually, this capitalization rate incorporates the required returns to various forms of capital, associated risks, and the anticipated changes over time.

Since agricultural land in Indiana is nearly evenly divided between cash rent and owner-occupied production, the Department of Local Government Finance utilized a six-year rolling average (1999 to 2004) on both methods in determining the market value in use of agricultural land. The capitalization rate applied to both types of net income was based on the annual average interest rate on agricultural real estate and operating loans in Indiana for this same period. The table below summarizes the data used in developing the average market value in use.

Table 2-18 - Updated for March 1, 2007

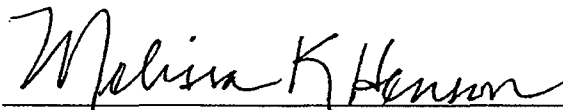
Source: Real Property Assessment Guidelines, Book 1, Chapter 2, Page 100

NET INCOMES				MARKET VALUE IN USE		
Year	Cash Rent	Operating	Cap. Rate	Cash Rent	Operating	Average
1999	99	36	8.77%	1,129	410	770
2000	101	60	9.57%	1,055	627	841
2001	102	61	8.01%	1,273	762	1,017
2002	105	19	7.02%	1,496	271	883
2003	106	71	6.29%	1,685	1,129	1,407
2004	104	138	6.35%	1,638	2,173	1,906

Average
Market Value \$1,140
In Use

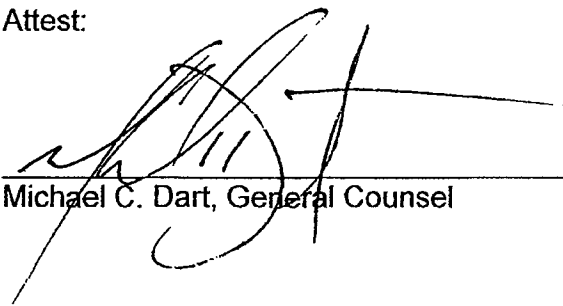
The statewide agricultural land base rate value for the 2007 assessment year will be the average market value in use calculated as shown above or \$1,140 per acre.

Dated this 28 day of December, 2006.



Melissa K. Henson, Commissioner

Attest:



Michael C. Dart, General Counsel

Table 2-18 - Updated for March 1, 2007

Source: Real Property Assessment Guidelines, Book 1, Chapter 2, Page 100

Year	NET INCOMES			MARKET VALUE IN USE		
	Cash Rent	Operating	Cap. Rate	Cash Rent	Operating	Average
1999	99	36	8.77%	1,129	410	770
2000	101	60	9.57%	1,055	627	841
2001	102	61	8.01%	1,273	762	1,017
2002	105	19	7.02%	1,496	271	883
2003	106	71	6.29%	1,685	1,129	1,407
2004	104	138	6.35%	1,638	2,173	1,906
Average Market Value In Use						1,140

Table 2-18 - Updated
Calculation for Net Income-Cash Rent Column

<u>Year</u>	<u>Gross</u> Cash <u>Rent</u>	<u>Less</u> Property <u>Taxes</u>	<u>Net</u> Cash <u>Rent</u>	<u>Cap.</u> <u>Rate</u>	<u>Cash</u> Rent <u>Value</u>
1999	110	-11	99	8.77%	1,129
2000	112	-11	101	9.57%	1,055
2001	113	-11	102	8.01%	1,273
2002	116	-11	105	7.02%	1,496
2003	120	-14	106	6.29%	1,685
2004	122	-18	104	6.35%	1,638

4/5/04

A Method for Assessing Indiana Cropland An Income Approach to Value

D. Howard Doster & John M. Huie, Purdue Ag Economists
June 24, 1999

Summary

A method for taxing agricultural cropland based on the income potential of the land can be developed. The method is illustrated below. Data components of this method include detailed soil maps, estimated yields and production costs by soil type, reported average yields by county, reported average Indiana November corn and soybean prices, USDA corn and soybean loan prices by county, and the interest rate on new Farm Credit Bank loans in the St Paul district.

Using this information, a land value can be calculated for each soil type in each county in Indiana. Using detailed soil maps, county staff can then calculate income, land value, and tax due for each ownership parcel.

Using state yields, prices, and costs for 1996, 1997, 1998, and estimates for 1999, income and land values are calculated below for average and high yield soil types. As shown in Table 1, the average land value is calculated to be \$971. In Table 2, the high yield land is valued at \$1510.

As shown in the tables, incomes for 1996 and 1997 are much higher than incomes for 1998 and projected 1999. Though not shown, income for 1995 was much higher than projected income for 1999.

Detailed soil maps

Maps from The Natural Resource and Conservation Service (NRCS) are now available for all counties indicating the soil type of all land in the state. County staff have used this information in past years. For five counties, this soil type information has been transferred to a GIS data base. In these counties, county staff could identify land ownership units in the GIS data base and with appropriate computer software, calculate the real estate tax on cropland.

In 1998, computer software was developed by Purdue Ag Economists for calculating income for user entered ownership parcels in Tippecanoe County. This program was shown at the July, 1998 Purdue Top Farmer Crop Workshop and the September, 1998 Prairie Farmer Farm Progress Show. The purpose of these demonstrations was to show prospective landowners, prospective tenants, and professional appraisers a way to estimate income potential of an ownership parcel.

Estimated yield and production cost by soil type

Purdue agronomists and NRCS staff have estimated crop yields for each soil type in Indiana. (These yield estimates may need to be updated, and possible differences considered for the same soil type in different counties.) Purdue staff annually estimate crop production costs for low, average, and high yielding soil types. The process could be computerized and budgets could be prepared for all Indiana soils.

Reported average yield by county

The Indiana Agricultural Statistics Service reports average yield for each county in May each year for the preceding year's crops. An expected trend yield could be calculated for each soil in each county. Each year, these trend yields could be adjusted by the same percentage change as the difference between the county expected and reported average yields.

Reported average Indiana November corn and soybean prices

The Indiana Agricultural Statistics Service reports average Indiana crop prices for each month. Prices for November^{1/} are used in calculating per acre corn and soybean income.

USDA corn and soybean loan price

USDA has determined corn and soybean loan prices for each Indiana county. These prices reflect crop price differences because of the location of the county. Therefore, the November state average prices for corn and soybeans could be adjusted by the price location differences in loan prices to obtain an estimate of November prices by county.

St Paul Farm Credit Bank interest rate

For each year, the Internal Revenue Service issues a listing of the average annual effective interest rates charged on new loans under the Farm Credit Bank system. These rates are used in computing the special use value of real property used as a farm for which an election is made under section 2032A of the Internal Revenue Code. Indiana is in the St Paul district. For 1999, the reported interest rate is .0821.

Weighted annual incomes and estimated land values

As shown in Table 1, the 4-year average annual income is \$80 and the estimated land value is \$971. As shown in Table 2, for the high yield land the average income is \$124 and the land value is \$1510.

Annual incomes could be weighted with income from the most recent year being weighted the most. One option would be a percentage weight of 40 - 30 - 20 - 10 with the most recent year at 40% and the most distant year at 10%. Using this criteria, the weighted average annual income is \$71.10 and the estimated average land value is \$866. A weighting of 33 - 27 - 22 - 18 with the most recent year at 33% and the most distant year at 18% produces a weighted average annual income of \$75.27 and an estimated average land value of \$917.

For high yield soil, the 40 - 30 - 20 - 10 optimal weights give an average income of \$113 and a land value of \$1379. The 33 - 27 - 22 - 18 weights give an average income of \$118 and a land value of \$1442.

This approach - discounting the potential agricultural income - to valuing farm land is reasonable so long as the income estimates and the discount rates are defensible. There is also logic to using a four year average with the most recent years being weighted higher, especially if the state were to go to annual assessments. So long as they stay with a four year assessment cycle it becomes more of a judgement call.

^{1/}Prices tend to increase throughout the year. November, a month close to the end of the harvest season was chosen. If prices later than November are chosen then a storage cost would also need to be included.

Income and land value estimates

As illustrated in Tables 1 and 2, income from a corn/soybean rotation on average and high yield soils is calculated for 1996-99.

State average yields for each soil are multiplied by November prices to obtain per acre sales.

Variable costs as found in the Purdue Crop Guide for average and high yield soils are subtracted to obtain per acre contribution margin from crops.

Corn contribution margin plus soybean contribution margin plus government payment is added and the sum is divided by 2 to get per acre total contribution margin.

Overhead costs from the Purdue Crop Guide for a corn/soybean farm are subtracted from the contribution margin to get per acre income.

Incomes for the four years are averaged.

The average income is divided by the St Paul interest rate to get estimated land value.

Table 1. Indiana Land Value Calculation
Based on an Income Approach, 1996-99
Average Yield Soil

	1996		1997		1998		1999	
	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans
Yield ^{1/}	123	38	122	43.5	132	42	134.1	42.9
Price (November) ^{1/}	<u>\$2.69</u>	<u>\$6.90</u>	<u>\$2.60</u>	<u>\$6.88</u>	<u>\$2.06</u>	<u>\$5.49</u>	<u>\$2.04</u>	<u>\$5.40</u>
Sales	\$331	\$262	\$317	\$299	\$282	\$231	\$274	\$232
Less variable costs ^{2/}	<u>134</u>	<u>94</u>	<u>137</u>	<u>96</u>	<u>148</u>	<u>85</u>	<u>145</u>	<u>86</u>
Crops contribution margin	\$197	\$168	\$180	\$203	\$134	\$146	\$129	\$146
Plus government payment ^{3/}	<u>\$23</u>		<u>\$45</u>		<u>\$53</u>		<u>\$34</u>	
Total contribution margin	\$194		\$214		\$167		\$154	
Less overhead:								
Annual machinery ^{2/}	48		50		49		49	
Drying/handling	6		6		7		7	
Family/hired labor ^{2/}	37		37		37		37	
Real estate tax ^{3/}	<u>10</u>		<u>10</u>		<u>10</u>		<u>10</u>	
Equals:								
Income	\$93		\$111		\$64		\$51	

4-year average income = \$80
1999 St Paul interest rate^{4/} = .0821
Estimated land value = \$971

^{1/} State average yield, state average November price as reported by Indiana Agricultural Statistics Service.

^{2/} Costs are taken from annual Purdue Crop Guide, ID-166.

^{3/} Government payments and real estate tax are estimated by the author.

^{4/} Average annual effective interest rate on new loans under the Farm Credit Bank System, St Paul district.

Table 2. Indiana Land Value Calculation
Based on an Income Approach, 1996-99
High Yield Soil

	1996		1997		1998		1999	
	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans
Yield ^{1/}	151.3	46.8	49.9	53.6	169	51	165	52.8
Price (November) ^{1/}	<u>\$2.69</u>	<u>\$6.90</u>	<u>\$2.60</u>	<u>\$6.88</u>	<u>\$2.06</u>	<u>\$5.49</u>	<u>\$2.04</u>	<u>\$5.40</u>
Sales	\$407	\$323	\$390	\$369	\$348	\$280	\$337	\$285
Less variable costs ^{2/}	<u>153</u>	<u>103</u>	<u>157</u>	<u>106</u>	<u>170</u>	<u>91</u>	<u>167</u>	<u>92</u>
Crops contribution margin	\$254	\$220	\$233	\$263	\$178	\$189	\$170	\$193
Plus government payment ^{3/}	<u>\$29</u>		<u>\$56</u>		<u>\$64</u>		<u>\$42</u>	
Total contribution margin	\$252		\$276		\$216		\$202	
Less overhead:								
Annual machinery ^{2/}	53		55		54		54	
Drying/handling	7		7		8		8	
Family/hired labor ^{2/}	37		37		37		37	
Real estate tax ^{3/}	<u>14</u>		<u>14</u>		<u>14</u>		<u>14</u>	
Equals:								
Income	\$141		\$163		\$103		\$89	

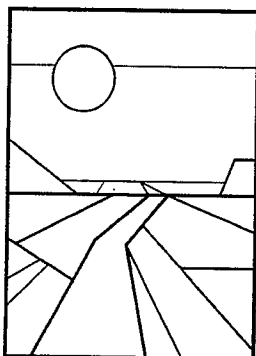
4-year average income = \$124
1999 St Paul interest rate^{4/} = .0821
Estimated land value = \$1510

^{1/} State average yield, state average November price as reported by Indiana Agricultural Statistics Service.

^{2/} Costs are taken from annual Purdue Crop Guide, ID-166.

^{3/} Government payments and real estate tax are estimated by the author.

^{4/} Average annual effective interest rate on new loans under the Farm Credit Bank System, St Paul district.



PURDUE AGRICULTURAL ECONOMICS REPORT

SEPTEMBER 2000

Indiana Land Values Rise

*Craig L. Dobbins, Professor and
Kim Cook, Research Associate*

The 2000 Purdue Land Values Survey indicates that the value of an acre of average bare Indiana cropland was \$2,173 per acre in June 2000. This was \$81 more than the value reported in June 1999, a 3.9 percent increase. This increase more than off-sets the 2.9 percent decline that was reported in 1999. Cash rents increased from 1999 to 2000 on average land by a little less than 2 percent to \$112 per acre. This is the same per acre value reported in 1998.

Statewide Land Values

For the six months ending in June 2000, the value of bare tillable land was reported to have increased 0.9 percent on top land, 0.6 percent on average land, and 0.6 percent on poor land (Table 1). While only a small upward change, these numbers indicate that the declines reported last year have not continued.

While statewide land values moved higher for this six-month period, local conditions always exert important influences. Thirty-two percent of the survey respondents

indicated that all classes of land were the same or higher during the December 1999 to June 2000 period. This was an increase from 24 percent of the respondents in last year's report. Thirteen percent of the respondents indicated that some or all classes of land fell in value during the same six-month period.* Forty-four percent indicated that land values remained unchanged during the six-month period.

The statewide 12-month increase in average value from June 1999 to June 2000 was 3.9 percent (Table 1).

Top-quality land (157 bushel corn yield rating) was estimated to have increased by \$72 per acre to \$2,715 (Table 1). Average land (127 bushel corn yield rating) was valued at \$2,173, an increase of \$81, while poor land (98 bushel corn yield rating) was estimated to be worth \$1,630 per acre, an increase of \$84.

The land value per bushel of corn yield rating also increased this year. For top-quality land, the value per bushel of yield was \$17.28, up by 1.2 percent. Average quality land value was \$17.04 per bushel, while the poor quality value was \$16.70 per bushel (Table 1). The percentage increases were 2.8 percent on average land and 4.9 percent on poor land. These per-bushel figures are \$0.20 higher than last year on top

land, \$0.47 higher on average land, and \$0.78 higher on poor land.

The value of transition land** also exhibited increases. The average value of transitional land in June 2000 was \$6,532, an increase of 8.5 percent from June 1999. For the six-month period from December 1999 to June 2000, transitional land increased by \$138 per acre, 2.2 percent (Table 1). However, due to the wide variation in estimates (from \$1,000 to \$30,000 in June, 2000), the median value may give a more meaningful picture than the arithmetic average. The median value of transitional land in June, 2000 was \$5,000 per acre, the same value reported in June, 1999.

Statewide Rents

Cash rents increased statewide from 1999 to 2000 by \$2 per acre on all

In This Issue

Indiana Land Values Rise	1
2000 Purdue Income Tax	
School Programs	6
Too Good To Last? The Outlook for the U.S. Economy in 2001	7
Outlook Meetings	8
Electricity Deregulation in Indiana.	9
Legal Points for Indiana	
Farmland Leases	12
Producers' Adjustments to "Freedom to Farm"	13
New Ag Econ Staff	16

* In 1999, 37 percent of the respondents reported that some or all classes of land declined in value from December 1998 to June 1999.

** Transitional land is land that is moving out of agriculture.

still positive, but smaller than those reported in other regions. The decline in land value was for top land in the Southeast region, declining 2.7 percent.

The highest valued top-quality land was in the Central area, \$3,006 per acre. The next highest values were in the West Central (\$2,786), Southwest (\$2,663), North (\$2,638), and Northeast (\$2,630). Reported values for average quality land were \$2,519 in the Central and \$2,289 in the West Central areas but only around \$1,800 to \$2,100 in the other areas.

Land values per bushel of estimated average corn yield (land value divided by bushels) on top land were \$17.61 and \$18.43 for the West Central and Central regions (Table 1) and between \$16.54 and \$16.96 for the Southwest, North, and Northeast. The Southeast had the lowest land value per bushel at \$15.35.

Respondents were asked to estimate rural home sites with no accessible gas line or city utilities and located on a black top or well-maintained gravel road. The median value for five-acre home sites was \$5,000 in all areas except the Central region, where the median was \$6,000 per acre (Table 3). Estimated per acre median values of the larger tracts (10 acres) ranged from \$4,000 to \$5,500.

Area Cash Rents

All regions except the Southeast reported increases in cash rents for the year (Table 2). This is a sharp contrast to last year's survey, in which only the North region reported cash rent increases. In the Southeast, a decline of 2.8 percent was reported for top land, and no change was reported for average and poor land. The only other cash rent decline reported was for poor land in the West Central region.

The largest percentage increase in cash rent occurred for average land in the Northeast region, increasing 4.0 percent. This was followed by an increase of 3.9 percent for top land in the Northeast and average land in the Southwest region.

Table 2. Average Estimated Indiana Cash Rent Per Acre, (Tillable, Bare Land) 1999 and 2000, Purdue Land Value Survey, June 2000

Area	Land Class	Corn bu/A	Rent/Acre		Change '99-'00 %	Rent/bu. of Corn		Rent as % of June Land Value	
			1999 \$/A	2000 \$/A		1999 \$/bu.	2000 \$/bu.	1999 %	2000 %
North	Top	156	139	140	0.7%	0.89	0.90	5.4	5.3
	Average	125	108	111	2.8%	0.88	0.89	5.6	5.4
	Poor	93	78	81	3.8%	0.87	0.87	5.8	5.7
Northeast	Top	155	127	132	3.9%	0.86	0.85	5.1	5.0
	Average	126	101	105	4.0%	0.82	0.83	5.1	5.1
	Poor	97	80	82	2.5%	0.83	0.85	5.2	5.1
W. Central	Top	158	153	153	0.0%	0.98	0.97	5.5	5.5
	Average	131	125	127	1.6%	0.96	0.97	5.5	5.5
	Poor	102	97	96	-1.0%	0.96	0.94	5.8	5.7
Central	Top	163	148	150	1.4%	0.92	0.92	5.2	5.0
	Average	134	122	123	0.8%	0.92	0.92	5.1	4.9
	Poor	105	96	99	3.1%	0.93	0.94	5.2	4.9
Southwest	Top	161	132	136	3.0%	0.83	0.84	5.1	5.1
	Average	126	102	106	3.9%	0.81	0.84	5.3	5.4
	Poor	92	74	76	2.7%	0.78	0.82	5.8	5.7
Southeast	Top	142	108	105	-2.8%	0.74	0.74	4.8	4.8
	Average	116	83	83	0.0%	0.71	0.72	4.7	4.6
	Poor	88	64	64	0.0%	0.70	0.72	4.8	4.5
Indiana	Top	157	138	140	1.4%	0.89	0.89	5.2	5.2
	Average	127	110	112	1.8%	0.87	0.88	5.3	5.2
	Poor	98	84	86	2.4%	0.87	0.88	5.4	5.3

Cash rents were again highest in the West Central and Central areas at \$153 and \$150 per acre, respectively, for top land, and \$127 and \$123 per acre, respectively, for average land. Cash rents per bushel for the Central and West Central regions ranged from \$0.92 to \$0.97. These were also the highest in the state. The per-bushel rent for top land was 90¢ in the North, 85¢ in the Northeast, 84¢ in the Southwest,

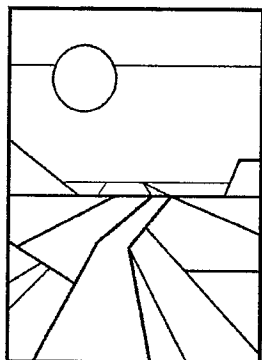
and 74¢ in the Southeast. In all areas, rates per bushel within areas varied by 3¢ or less by land quality.

Land Market Activity

In a period of low commodity prices in which there are only a few "must sell" transactions, there is often a reduced number of farmland transfers. In effect, price is maintained by limiting supply. While the survey does not provide strong evidence that

Table 3. Median Value of Five-Acre Home Sites and Home Sites of 10 Acres or More

Area	Median Value, \$ per acre							
	Under 5 Acres				10 Acres & Over			
	1997 \$/A	1998 \$/A	1999 \$/A	2000 \$/A	1997 \$/A	1998 \$/A	1999 \$/A	2000 \$/A
North	5,000	5,000	5,000	5,000	4,250	4,000	5,000	5,000
Northeast	4,250	5,000	5,000	5,000	4,000	4,000	4,000	4,500
West Central	5,000	5,000	5,000	5,000	5,000	4,700	4,000	5,000
Central	5,000	5,000	5,000	6,000	4,500	5,000	5,000	5,500
Southwest	4,250	5,000	5,000	5,000	5,000	4,500	5,000	5,000
Southeast	4,000	5,000	5,000	5,000	3,500	3,000	3,750	4,000



PURDUE AGRICULTURAL ECONOMICS REPORT

AUGUST 2002

Indiana Farmland Values & Cash Rents Move Higher

Craig L. Dobbins, Professor and Kim Cook, Research Associate

The 2002 Purdue Land Values Survey indicates that the value of average bare Indiana cropland was \$2,382 per acre in June 2002. This was \$118 more than the value reported in June 2001, a 5.2% increase. Cash rents increased from 2001 to 2002 on average land by 2.7% to \$116 per acre.

Statewide Land Values

For the *six months* ending in June 2002, the value of bare tillable land was reported to have increased 2.0% on top land, 2.1 percent on average land, and 2.5 percent on poor land (Table 1). Forty-six percent of the survey respondents indicated that all classes of land (top, average, and poor) were the same or higher during the December 1, 2000 to June 1, 2001 period. Only 4% of the respondents indicated that some or all classes of land fell in value. Forty-two percent of the respondents indicated that land values remained unchanged during the December 1, 2001 to June 1, 2002 period.

The statewide *12-month* increase in average land from June 2001 to June 2002 was 5.2% (Table 1). Top-quality land (162 bushel corn yield rating) was estimated to have increased by \$90 per acre to \$2,892 (Table 1). Average land (132 bushel

corn yield rating) was valued at \$2,382, an increase of \$118, while poor land (102 bushel corn yield rating) was estimated to be worth \$1,869 per acre, an increase of \$136.

The land value per bushel of corn yield rating also increased this year. For top-quality land, the value per bushel of yield was



\$17.85, up by 1.0%. Average quality land value was \$18.06 per bushel, while the poor quality value was \$18.25 per bushel (Table 1). The percentage increases were 3.0% on average land and 4.8% on poor land. These per-bushel figures are \$0.18 higher than last year on top land, \$0.53 higher on average land, and \$0.83 higher on poor land.

The average value of transition land* declined this year. This decline came after two years of increasing values. The average value of transitional land in June 2002 was \$6,447, a decrease of 2.7% from June 2001. For the six-month period from June 2001 to December 2001 transitional land values declined even more. However, in the latter half of the year, December 2001 to June 2002, transitional land increased by 4.9% (Table 1). Due to the wide variation in estimates for transitional land, the median value may give a more meaningful picture than the arithmetic average. The median value of transitional land in June 2002 was

\$5,500 per acre, \$250 more than reported in June 2001.

Statewide Rents

Cash rents increased statewide from 2001 to 2002 by \$2 to \$4 per acre (Table 2). The estimated cash rent was \$143 per acre on top land, \$116 per acre on average land, and \$91 per acre on poor land. Rent per bushel of estimated corn yield was \$0.88 on top and average land and \$0.89 on poor land. This was an increase for poor land, decrease for top land, and no change for average land. For 2002, cash rent as a percentage of value was 4.9% for all land classes. (Table 2).

Area Land Values

Changes in the value of farmland in the six different geographic areas of Indiana (Figure 1) for December 2001 to June 2002 ranged from a 0.1% increase for top land in Southwest region to a 3.1% increase for top

In This Issue

Indiana Farmland Values & Cash Rents Move Higher	1
Ag Lawyers will Visit Indianapolis	7
Indiana Weed Control Boards	7
Employment and Investment Trends in Indiana Manufacturing	8
Educational Opportunities	12

* Transitional land is land that is moving out of agriculture.

In the Southwest region, the value per bushel declined as land quality decline.

Respondents were asked to estimate values of rural home sites with no accessible gas line or city utilities and located on a black top or well-maintained gravel road. The median value for five-acre home sites ranged from \$5,000 to \$7,000 per acre (Table 3). Estimated per acre median values of the larger tracts (10 acres) ranged from \$4,500 to \$5,750 per acre.

Area Cash Rents

For the year, the West Central, Central, and Southwest reported increases in cash rent for all land classes. (Table 2). The strongest increases in cash rents occurred in the Southwest region, increasing 7.9% on poor land, 4.7% on average land, and 3.6% on top land. The West Central region reported the next strongest increases, ranging from a 2.0% increase on top land to a 5.1% increase on poor land. The Northeast and Southeast regions each had a mixture of increases and no change in cash rents. The only decrease in cash rent value was reported for top quality land in the North region.

Cash rents were again highest in the Central and West Central areas at \$156 and \$154 per acre, respectively, for top land. Cash rents per bushel for the West Central and Central regions ranged from \$0.92 to \$0.98. These were also the highest in the state. The next highest per-bushel rent was in the North, ranging from \$0.88 to \$0.90 per bushel. Per bushel rents in the Northeast and Southwest ranged from \$0.82 to \$0.86. The lowest per bushel cash rents were \$0.73 reported for the Southeast.

Land Market Activity

Several factors influence farmland prices. The supply of land on the market, the eagerness of buyers to make purchases, and expectations about grain prices, interest rates, and the rate of inflation are just a few examples. To assess the supply of land on the market, respondents were asked to indicate the amount of farmland on the market compared to

Table 2. Average estimated Indiana cash rent per acre, (tillable, bare land) 2001 and 2002, Purdue Land Value Survey, June 2002

Area	Land Class	Corn bu/A	Rent/Acre		Change '01-'02 %	Rent/bu. of Corn		Rent as % of June Land Value	
			2001 \$/A	2002 \$/A		2001 \$/bu.	2002 \$/bu.	2001 %	2002 %
North	Top	160	142	141	-0.7%	0.90	0.88	5.3	5.1
	Average	128	110	113	2.7%	0.88	0.88	5.2	5.0
	Poor	98	82	88	7.3%	0.89	0.90	5.3	5.2
Northeast	Top	162	132	132	0.0%	0.85	0.82	4.9	4.8
	Average	129	104	104	0.0%	0.81	0.81	4.9	4.7
	Poor	99	80	81	1.3%	0.81	0.82	4.9	4.6
W. Central	Top	161	151	154	2.0%	0.96	0.96	5.3	5.2
	Average	134	128	131	2.3%	0.97	0.98	5.5	5.2
	Poor	106	98	103	5.1%	0.95	0.97	5.6	5.3
Central	Top	166	154	156	1.3%	0.94	0.94	4.9	4.9
	Average	139	126	128	1.6%	0.93	0.92	4.8	4.8
	Poor	110	101	103	2.0%	0.94	0.94	4.7	4.6
Southwest	Top	168	140	145	3.6%	0.85	0.86	5.0	5.1
	Average	132	107	112	4.7%	0.83	0.85	5.0	5.1
	Poor	99	76	82	7.9%	0.80	0.83	5.2	5.8
Southeast	Top	153	109	111	1.8%	0.73	0.73	4.5	4.4
	Average	120	86	88	2.3%	0.73	0.73	4.3	4.2
	Poor	91	66	66	0.0%	0.72	0.73	4.2	3.9
Indiana	Top	162	141	143	1.4%	0.89	0.88	5.0	4.9
	Average	132	113	116	2.7%	0.88	0.88	5.0	4.9
	Poor	102	87	91	4.6%	0.87	0.89	5.0	4.9

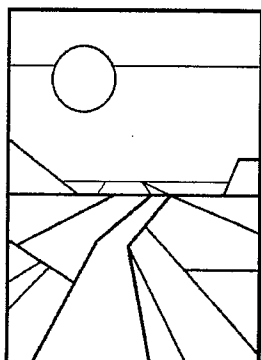
a year earlier. The respondents indicated there was more, less, or the same amount of land compared to a year earlier. For the last three years the majority of the respondents have indicated that the amount of land on the market was the same as the previous year (Figure 2). Nearly 40% indicated there was less land on the market. Just over 10% indicate an increase. These observations indicate the supply of land for sale is limited. There are a few areas in which the

quantity of land for sale increased, but there are more than three times as many areas where the quantity of land available for sale decreased.

Respondents were also asked to provide their assessment regarding the number of farmland transfers during the previous six months compared to a year ago by indicating if the number of transfers had increased, decreased, or remained the same. Twenty-four percent of the respondents indicated an increase in

Table 3. Median value of five-acre home sites and home sites of 10 acres or more

Area	Median value, \$ per acre							
	5 Acres or less for home site				10 Acres & over for subdivision			
	1999 \$/A	2000 \$/A	2001 \$/A	2002 \$/A	1999 \$/A	2000 \$/A	2001 \$/A	2002 \$/A
North	5,000	5,000	5,250	6,000	5,000	5,000	5,000	5,000
Northeast	5,000	5,000	5,000	5,000	4,000	4,500	4,500	4,500
West Central	5,000	5,000	5,000	5,800	4,000	5,000	5,000	5,000
Central	5,000	6,000	6,250	7,000	5,000	5,500	5,000	5,750
Southwest	5,000	5,000	6,000	5,000	5,000	5,000	6,000	5,000
Southeast	5,000	5,000	5,000	5,500	3,750	4,000	4,000	5,000



PURDUE AGRICULTURAL ECONOMICS REPORT

AUGUST 2004

Indiana Farmland Values & Cash Rents Continue to Climb

Craig L. Dobbins and Kim Cook

The June 2004 Purdue Land Values Survey found that on a state-wide basis bare Indiana cropland ranged in value from \$2,131 per acre for poor land, to \$3,278 per acre for top land (Table 1). Average bare Indiana cropland had an estimated value of \$2,693 per acre. For the 12-month period ending in June 2004, this was an increase of 8.4%, 7.3% and 8.0%, respectively for poor, average, and top land. Increases this large have not been experienced since 1996-1997 when the Purdue Land Values Survey reported a state wide increase of 12% to 15%.

Part the difference in land values reflects productivity differences. As a measure of productivity, survey respondents provide an estimate of long-term corn yields. The average reported yield was 105, 135, and 165 bushels per acre, respectively for poor, average, and top land. The value per bushel for different land qualities was very similar, ranging from \$19.88 to \$20.34 per bushel.

The average value of transitional land, land moving out of agriculture, increased 9.0% this year. The average value of transitional land in June 2004 was \$7,561 per acre. Due to the

wide variation in estimates for transitional land, the median value* may give a more meaningful picture than the arithmetic average. The median value of transitional land in June 2004 was \$6,000 per acre.

Statewide Rents

Cash rents increased statewide \$2 to \$3 per acre (Table 2), continuing the steady increase of the past several years.

The estimated cash rent was \$150 per acre on top land, \$122 per acre on average land, and \$96 per acre on poor land. This was an increase in rental rates of 3.2% for poor land, 1.7% for average land, and 2.0% for top land. State wide, rent per bushel of estimated corn yield ranged from \$0.90 to \$0.92 per bushel.

Cash rent as a percentage of value continued to decline. For top farmland, cash rent as a percentage of farmland value was 4.6%. For poor and average farmland, cash rent as a percentage of farmland was 4.5%. These values are the lowest reported in the 28 year history of the Purdue Land Value Survey.

Area Land Values

Survey responses were organized into six geographic areas of Indiana (Figure 1). While all regions of the state reported increases in farmland

values for the year, these increases varied across the state (Table 1). The North and Northeast regions exhibited the strongest increases, ranging from 10.7% to 12.9%. The West Central region also reported strong price increases, ranging from 8.8% to 9.8%. Increases in the Central region ranged from 6.4% to 6.9%. With the exception of the poor land in the Southwest region, the increases in the Southwest, and Southeast regions were more modest.

The highest valued land continues to be the top-quality land in the Central region, \$3,551 per acre. This region was followed by North (\$3,382), West Central (\$3,351), Northeast (\$3,192), Southwest (\$2,909), and Southeast (\$2,874).

Land value per bushel of estimated long-term corn yield (land value divided by bushels) is the

* The median value is the value of the data item which divides data arranged in ascending or descending numerical order in half.

In This Issue

Indiana Farmland Values & Cash Rents Continue to Climb	1
The Use of New Generation Grain Marketing Contracts	7
The Impact of Health Information and Women in the Work Force on Aggregate Meat Demand	10
Landlord Knowledge of Farmland Leasing: Do you need a Farm Manager?	11

Farmland Supply & Demand

The supply of land on the market and the number of interested buyers and their expectations are important influences in the farmland market. To assess the supply of land on the market, respondents were asked to provide their opinion about the amount of farmland on the market now compared to a year earlier. The respondents were asked to indicate if the amount of land on the market now compared to a year earlier was more, the same or less. At 17%, the 2004 results had a few more respondents indicating more land on the market than last year (Figure 2). However, 83% of the respondents indicated that the amount of land on the market at the current time was the same or less than a year ago. These results continue to indicate the quantity of land for sale remains limited.

Respondents were also asked to provide their perceptions of changes in who was interested in buying farmland. Compared to a year earlier, respondents were asked to indicate if interest by farmers, rural residents, or nonfarm investors in making a farmland purchase had increased, decreased, or remained the same. Interest from farmers showed the largest change. This year, just over 61% of the respondents indicated that when compared to the previous year there was increased interest from farmers (Figure 3). This continues an upward trend in the number of respondents indicating increased farmer interest in farmland purchases.

The demand for rural residents continues to be strong, 73% of the respondents indicated an increase in demand for rural residences. Twenty-four percent indicated that demand for rural residences remained the same. Three percent of the respondents indicated a decline in the demand for rural residents. These responses are similar to those of past years and indicate that demand for rural residences remains strong.

The stock market has shown some recovery from its steep decline, but interest rates continue to be low. Interest from nonfarm investors in acquiring farmland for their

Table 2. Average estimated Indiana cash rent per acre, (tillable, bare land) 2003 and 2004, Purdue Land Value Survey, June 2004

Area	Land Class	Corn bu/A	Rent/Acre		Change 03-04 %	Rent/bu. of Corn		Rent as % of June Land Value	
			2003 \$/A	2004 \$/A		2003 \$/bu.	2004 \$/bu.	2003 %	2004 %
North	Top	167	143	149	4.2%	0.88	0.89	4.7	4.4
	Average	137	115	122	6.1%	0.88	0.89	4.8	4.5
	Poor	106	91	93	2.2%	0.91	0.88	4.9	4.5
Northeast	Top	164	138	138	0.0%	0.86	0.84	4.8	4.3
	Average	131	106	107	0.9%	0.83	0.81	4.5	4.1
	Poor	100	82	85	3.7%	0.84	0.85	4.5	4.1
W. Central	Top	165	158	162	2.5%	0.95	0.98	5.2	4.8
	Average	139	134	137	2.2%	0.97	0.99	5.2	4.9
	Poor	107	106	109	2.8%	0.98	1.02	5.2	4.9
Central	Top	170	158	162	2.5%	0.95	0.95	4.7	4.6
	Average	141	129	133	3.1%	0.93	0.94	4.6	4.4
	Poor	111	102	108	5.9%	0.94	0.97	4.3	4.3
Southwest	Top	162	147	146	-0.7%	0.88	0.90	5.2	5.0
	Average	130	115	116	0.9%	0.87	0.89	5.5	5.2
	Poor	100	79	89	12.7%	0.82	0.89	6.0	5.6
Southeast	Top	154	114	118	3.5%	0.75	0.77	4.2	4.1
	Average	124	93	94	1.1%	0.75	0.76	4.0	3.9
	Poor	97	71	72	1.4%	0.74	0.74	3.7	3.7
Indiana	Top	165	147	150	2.0%	0.90	0.91	4.8	4.6
	Average	135	120	122	1.7%	0.90	0.90	4.8	4.5
	Poor	105	93	96	3.2%	0.90	0.92	4.7	4.5

portfolios appears to be strong with 51% of the respondents indicating increased interest compared to last year (Figure 4). While still strong, it is not as strong as reported last year. Only 9% of the respondents indicated a decline in the number of interested nonfarm investors.

Future grain prices, interest rates, inflation, changes in farmland values

Making a farmland purchase is a long term commitment. An important component of the current price is the expected future earnings. As a result, expectations regarding crop prices

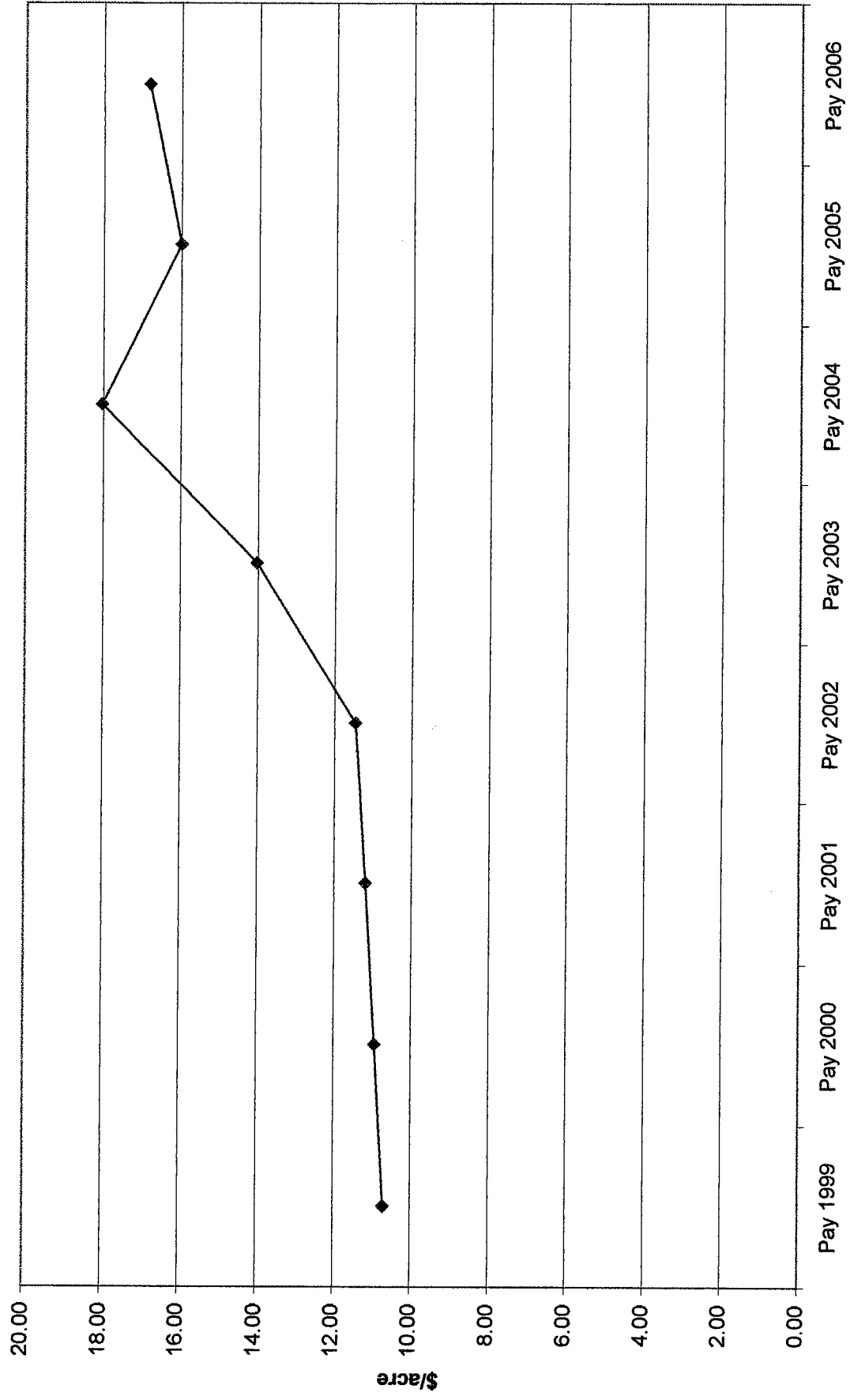
over the next few years have a strong influence on farmland values. In order to gain insight into price expectations, respondents were asked to estimate the annual average on-farm price of corn and soybeans for the period 2004 to 2008.

This year saw a significant increase in the expected five-year average price of corn and soybeans (Table 4). Average corn price expectations for the next five years increased \$0.27 per bushel to \$2.54. The average price for soybeans increased nearly a dollar to \$6.40. It has been six years since respondents have been this optimistic about corn

Table 3. Median value of five-acre and ten-acre home sites

Area	Median value, \$ per acre							
	5 Acres or less for home site				10 Acres & over for subdivision			
	2001 \$/A	2002 \$/A	2003 \$/A	2004 \$/A	2001 \$/A	2002 \$/A	2003 \$/A	2004 \$/A
North	5,250	6,000	6,000	6,000	5,000	5,000	5,000	5,000
Northeast	5,000	5,000	6,000	6,000	4,500	4,500	5,000	5,000
West Central	5,000	5,800	6,000	6,000	5,000	5,000	5,000	5,000
Central	6,250	7,000	8,500	8,000	5,000	5,750	7,500	7,900
Southwest	6,000	5,000	5,000	5,000	6,000	5,000	5,000	5,000
Southeast	5,000	5,500	6,000	6,000	4,000	5,000	4,750	5,000

Average Net Tax Bill/Acre of Farmland



Average net Tax bill/acre of farmland

Pay 1999	10.70
Pay 2000	10.94
Pay 2001	11.19
Pay 2002	11.46
Pay 2003	14.03
Pay 2004	18.03
Pay 2005	16.00
Pay 2006	16.82

Indiana

		<u>Real Estate Loans</u>	<u>Operating Loans</u>	<u>Avg.</u>
1999	Jan.	8.06	9.03	
	April	8.18	9.11	
	July	8.42	9.32	
	Oct.	8.59	9.44	
	Average	8.31	9.23	8.77
2000	Jan.	8.89	9.78	
	April	9.21	10.43	
	July	9.18	10.17	
	Oct.	8.9	9.92	
	Average	9.05	10.08	9.57
2001	Jan.	8.23	9.16	
	April	7.91	8.60	
	July	7.47	8.01	
	Oct.	7.21	7.41	
	Average	7.71	8.30	8.01
2002	Jan.	7.22	7.33	
	April	7.08	7.28	
	July	6.84	7.21	
	Oct.	6.51	6.7	
	Average	6.91	7.13	7.02
2003	Jan.	6.36	6.61	
	April	6.04	6.43	
	July	6.12	6.41	
	Oct.	6.05	6.26	
	Average	6.14	6.43	6.29
2004	Jan.	5.87	6.22	
	April	6.23	6.39	
	July	6.28	6.57	
	Oct.	6.39	6.81	
	Average	6.19	6.50	6.35

AgLetter

FARMLAND VALUES AND CREDIT CONDITIONS

Summary

The 2002 annual increase of 7 percent in the value of "good" agricultural land for the Seventh Federal Reserve District was the largest increase since 1997. The quarterly increase in farmland values remained 2 percent, on average, for the District, based on a survey of 370 agricultural bankers as of January 1, 2003. More bankers projected farmland values to rise over the next three months and fewer expected farmland values to go down.

Agricultural credit conditions have changed for the better from a year ago according to District bankers. The improvement in the availability of funds was the highest since 1993. Moreover, the index of loan repayment rates reached a level not seen since 1997. Demand for loans inched up in the fourth quarter to the level of a year ago. There was even a smaller proportion of banks that required increased collateral. Renewals and extensions of loans continued to be higher in the fourth quarter than a year earlier, but the pace slowed from the third quarter. Interest rates on agricultural loans dropped across the District again, the tenth quarterly drop in a row. Loan-to-deposit ratios fell below the levels of the last two quarters, but still were above the

level of a year ago. Thus, several positive signals indicate improvement in the District's agricultural credit conditions, alleviating some concern about financial stress in the agricultural economy. Yet, there is still broad concern about the financial health of farms in the District, especially for those in areas with low yields in 2002 and those with dairy operations.

Farmland values

The value of "good" agricultural land increased in all the states of the District in the fourth quarter of 2002 (see table and map below). From October 1 to January 1, Illinois led the states with a 4 percent increase in farmland values, after lagging behind the other states in the third quarter. The rate of change in Michigan's farmland values trailed the other states with a 1 percent increase (quarter-to-quarter). Farmland values in Indiana, Iowa, and Wisconsin exhibited growth of 2 percent for the quarter, a surprise given the varied agricultural performance each experienced last year.

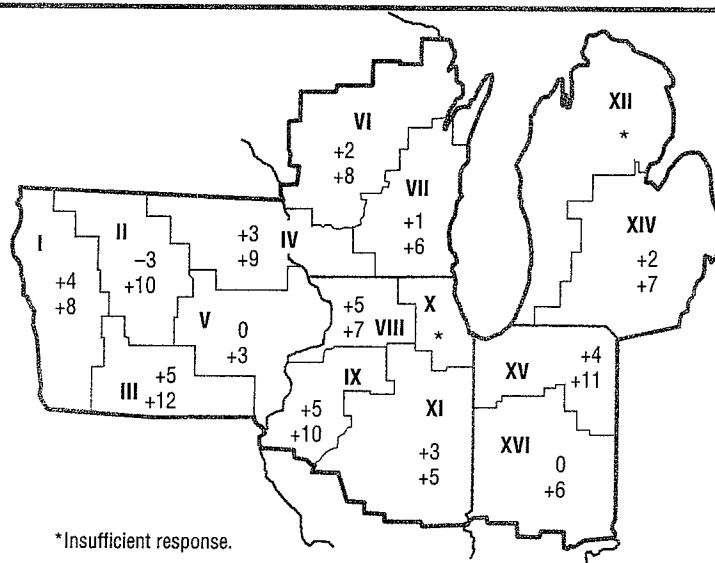
For last year district farmland values were up on average 7 percent, the best year-over-year results since 1997 (see chart 1). State increases only ranged from 8 percent gains in Indiana and Iowa down to a 6 percent gain in Michigan. Thirty-two percent of Seventh District bankers expect farmland values to rise, with only 2 percent seeing a fall during

Percent change in dollar value of "good" farmland

Top: October 1, 2002 to January 1, 2003

Bottom: January 1, 2002 to January 1, 2003

	October 1, 2002 to January 1, 2003	January 1, 2002 to January 1, 2003
Illinois	+4	+7
Indiana	+2	+8
Iowa	+2	+8
Michigan	+1	+6
Wisconsin	+2	+7
Seventh District	+2	+7



*Insufficient response.

Credit conditions at Seventh District agricultural banks

	Loan demand	Fund availability	Loan repayment rates	Average loan-to-deposit ratio ¹	Interest rates on farm loans		
	(index) ²	(index) ²	(index) ²	(percent)	Operating loans ¹	Feeder cattle ¹	Real estate ¹
1998							
Jan-Mar	134	113	84	68.9	9.52	9.51	8.50
Apr-June	127	102	74	72.7	9.54	9.55	8.52
July-Sept	117	104	60	72.0	9.43	9.41	8.33
Oct-Dec	113	121	57	70.3	9.09	9.07	8.06
1999							
Jan-Mar	120	119	40	69.9	9.03	9.01	8.06
Apr-June	115	107	50	71.7	9.11	9.08	8.18
July-Sept	109	94	63	72.7	9.32	9.28	8.42
Oct-Dec	107	104	72	72.7	9.44	9.41	8.59
2000							
Jan-Mar	121	95	77	72.9	9.78	9.72	8.89
Apr-June	109	76	72	75.5	10.43	10.14	9.21
July-Sept	106	82	77	76.9	10.17	10.14	9.18
Oct-Dec	105	92	81	74.9	9.92	9.90	8.90
2001							
Jan-Mar	118	101	67	75.0	9.16	9.17	8.23
Apr-June	106	109	73	75.1	8.60	8.58	7.91
July-Sept	91	127	86	74.9	8.01	8.07	7.47
Oct-Dec	101	129	75	72.8	7.41	7.51	7.21
2002							
Jan-Mar	108	118	66	72.7	7.33	7.48	7.22
Apr-June	105	120	71	75.1	7.28	7.35	7.08
July-Sept	99	124	76	75.7	7.21	7.26	6.84
Oct-Dec	101	130	88	73.2	6.70	6.78	6.51

¹At end of period.

²Bankers responded to each item by indicating whether conditions during the current quarter were higher, lower, or the same as in the year-earlier period. The index numbers are computed by subtracting the percent of bankers that responded "lower" from the percent that responded "higher" and adding 100.

expect an increase in non-real estate loan volume, while 19 percent expect a decrease in volume. Bankers foresee increases in operating loans (36 percent) and Farm Service Agency (FSA) guaranteed loans (29 percent). Even after a poor harvest, Indiana was the only state where more bankers expect an increase in farm machinery loan volume than a decrease during January, February, and March compared to a year ago. A majority (58 percent) of the respondents indicated that they expected loan volumes would remain the same as a year ago in the period from January to March. Only 22 percent of the bankers look for higher real estate loan volume, which is greater than the 15 percent that look for lower volume. However, in Wisconsin at least a third anticipate lower volumes for both real estate and non-real estate loans, with a similar percentage anticipating a rise in operating loans.

Capital expenditures by farmers in the year ahead look to be weak, though about half of the respondents foresee no change in the level of capital expenditures from last year. The worst prospects are for expenditures on buildings and facilities with only 7 percent of the bankers seeing higher levels of spending and 42 percent anticipating lower levels. Expenditures on land purchases or improvements were projected by 20 percent to be higher than last year and by 27 percent to be lower.

There is likely to be an expansion in the number of acres planted to corn or soybeans containing genetically modified organisms (GMOs) this spring in the District, as over a quarter of the bankers anticipated a rise in the use of GMO seed. The vast majority of respondents are willing to finance farmer purchases of GMO seed (only 4 percent were not willing), as the drive for efficiency and higher yields leads farmers to embrace the benefits of biotechnology.

David B. Oppedahl, *Associate Economist*

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AgLetter

FARMLAND VALUES AND CREDIT CONDITIONS

Summary

Capping the strongest two years of growth since the 1970s, the annual increase in farmland values was 10 percent in 2005, based on surveys completed by 258 agricultural bankers in the Seventh Federal Reserve District. The quarterly gain in the value of "good" agricultural land for the District was 2 percent in the fourth quarter of 2005. Just under 30 percent of the respondents expected farmland values to increase in the first quarter of 2006 and almost 70 percent expected them to remain stable.

District agricultural credit conditions slipped from the beginning of 2005, recovering a bit in the fourth quarter, while agricultural interest rates continued their climb, as of January 1, 2006. Indexes of loan demand, loan repayment rates, and funds availability were above the levels of the third quarter of 2005, although loan repayment rates were below the level of a year ago. Loan renewals and extensions in the fourth quarter were below the level of the previous quarter, but were higher than a year earlier. Required collateral was higher for October to December 2005 than for the same period in 2004. Loan-to-deposit ratios were down to 75.8 percent from the third quarter, which is about 4 percentage points below the ratio preferred by District bankers.

Farmland values

Following a 12 percent rise in 2004, the value of "good" agricultural land in the District posted a 10 percent increase in 2005. With consecutive years of double-digit gains, a similar spurt in District farmland values (23 percent from 2003 to 2005) last occurred in the 1970s. Indeed, when adjusted for inflation, farmland values have not increased at the pace of the last two years in nearly three decades (see chart on next page). Wisconsin continued to exhibit the largest annual increase at 13 percent (see table and map below). Illinois and Iowa farmland values rose 10 percent for the year. Indiana and Michigan were below the District average at 9 percent and 6 percent, respectively.

Responding bankers cited the same factors as in previous surveys for the increase in land values, although the factors may have varied by location. These factors included strong demand for farmland by investors, particularly for recreational purposes, tax-deferred exchanges, and, at least in some areas, a limited number of farms for sale.

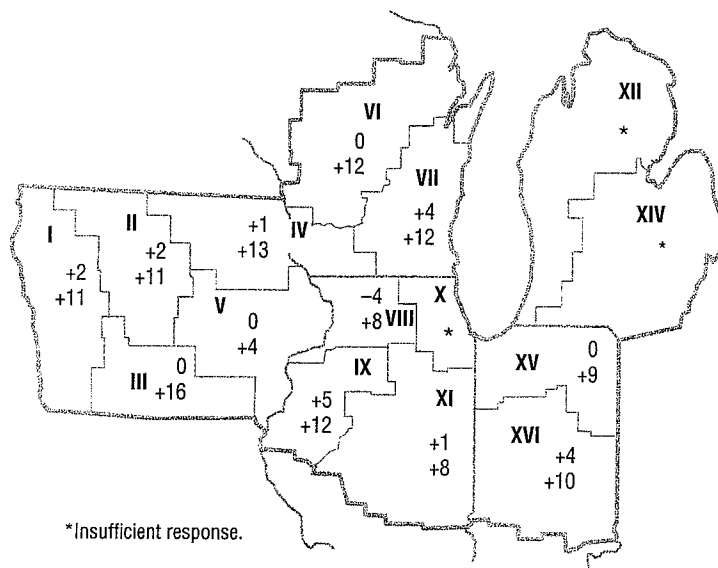
Moreover, the second-highest U.S. net cash farm income on record, according to the U.S. Department of Agriculture (USDA) forecast, helped extend the upswing in farmland values. Crop receipts in 2005 dropped \$12 billion, as the corn and soybean crops were the second largest after the record-setting harvest of 2004. In conjunction,

Percent change in dollar value of "good" farmland

Top: October 1, 2005 to January 1, 2006

Bottom: January 1, 2005 to January 1, 2006

	October 1, 2005 to January 1, 2006	January 1, 2005 to January 1, 2006
Illinois	+2	+10
Indiana	+3	+9
Iowa	+1	+10
Michigan	+4	+6
Wisconsin	+2	+13
Seventh District	+2	+10



Credit conditions at Seventh District agricultural banks

	Loan demand	Funds availability	Loan repayment rates	Average loan-to-deposit ratio	Interest rates on farm loans		
					Operating loans ¹	Feeder cattle ¹	Real estate ¹
	(index) ²	(index) ²	(index) ²	(percent)	(percent)	(percent)	(percent)
2003							
Jan-Mar	109	130	79	72.4	6.61	6.75	6.36
Apr-June	99	138	84	72.7	6.43	6.52	6.04
July-Sept	95	129	86	72.9	6.41	6.47	6.12
Oct-Dec	97	127	104	71.8	6.26	6.35	6.05
2004							
Jan-Mar	116	131	128	73.2	6.22	6.28	5.87
Apr-June	101	117	118	73.7	6.39	6.46	6.23
July-Sept	109	111	112	74.5	6.57	6.61	6.28
Oct-Dec	109	121	127	74.1	6.81	6.80	6.39
2005							
Jan-Mar	117	112	116	74.4	7.07	7.08	6.63
Apr-June	119	101	103	76.3	7.33	7.30	6.74
July-Sept	115	97	87	76.9	7.68	7.65	7.02
Oct-Dec	120	110	90	75.8	8.02	7.95	7.25

¹At end of period.

²Bankers responded to each item by indicating whether conditions during the current quarter were higher, lower, or the same as in the year-earlier period. The index numbers are computed by subtracting the percent of bankers that responded "lower" from the percent that responded "higher" and adding 100.

conditions. While Indiana also had higher levels, Iowa, Michigan, and Wisconsin bankers reported lower levels of loan renewals and extensions in 2005.

Demand for non-real-estate loans rose as well during October, November, and December from a year ago, with the index of loan demand increasing to 120. More than twice as many bankers reported an increase in the demand for non-real-estate loans as reported a decrease (36 percent versus 16 percent). Illinois, Indiana, and Iowa experienced elevated non-real-estate loan demand, whereas Michigan and Wisconsin had lower demand for non-real-estate loans last quarter.

Some banks expressed concerns about their ability to garner deposits, but funds availability increased across the District relative to 2004's fourth quarter. With 22 percent of the respondents reporting higher funds availability and 13 percent lower, the index of funds availability was 110. This reversed the decline of last quarter and added a fifth year to the trend for increased funds availability.

Looking forward

Credit conditions may deteriorate in 2006 based on USDA's forecast of net cash farm income falling 22 percent from 2005. The 2006 forecast has the value of agricultural production dropping 2 percent and direct government payments shrinking 20 percent, with manufactured input costs growing 7 percent and interest payments rising 11 percent. Given the fact that drought has lowered the subsoil moisture available in much of the District, timely

rains this growing season will be essential to avoid a more serious decline in credit conditions in 2006.

For January, February, and March of 2006, almost 40 percent of the respondents expected higher levels of non-real-estate loan volume (versus 10 percent lower), particularly for operating loans and those guaranteed by the Farm Service Agency. Only 18 percent of the bankers reported projections of higher real-estate loan volume in the first quarter of 2006, compared to 13 percent projecting lower volume. Moreover, the surveyed bankers expected capital expenditures by farmers to fall in the year ahead, restricting loan demand for 2006.

David B. Oppedahl, *Business economist*

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Income Approach: November, Annual Average, & Marketing Year Average Prices

Line #	Column	1999		2000		2001		2002		2003		2004		Source or Formula:
		Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans	
1	Yield	132	39	146	46	156	49	121	41	146	38	168	52	IASS - Crop Summary
2	Price - November	1.75	4.56	1.83	4.57	1.83	4.18	2.41	5.53	2.25	7.25	1.82	5.22	IASS - Crop Prices
3	Price - Annual Avg.	2.03	4.67	1.91	4.85	1.94	4.54	2.21	5.06	2.36	6.26	2.49	7.63	DLGF Calculation
4	Price - Market Avg.	2.11	5.05	1.88	4.71	1.90	4.61	1.98	4.42	2.41	5.55	2.53	7.67	IASS - Crop Prices
5	GI - November	231.00	177.84	267.18	210.22	285.48	204.82	291.61	226.73	328.50	275.50	305.76	271.44	Line 1 times Line 2
6	GI - Annual Avg.	267.96	182.13	278.86	223.10	302.64	222.46	267.41	207.46	344.56	237.88	418.32	396.76	Line 1 times Line 3
7	GI - Market Avg.	278.52	196.95	274.48	216.66	296.40	225.89	239.58	181.22	351.86	210.90	425.04	398.84	Line 1 times Line 4
8	AA v Nov	36.96	4.29	11.68	12.88	17.16	17.64	-24.20	-19.27	16.06	-37.62	112.56	125.32	Line 6 minus Line 5
9	MA v Nov	47.52	19.11	7.30	6.44	10.92	21.07	-52.03	-45.51	23.36	-64.60	119.28	127.40	Line 7 minus Line 5
10	NRTL - November	18		54		50		43		82		57		DLGF Calculation
11	NRTL - Annual Avg	39		66		68		21		71		176		Line 10 + or - Avg. Line 8
12	NRTL - Market Avg	51		61		66		-6		61		180		Line 10 + or - Avg. Line 9
13	NRTL Average	36		60		61		19		71		138		Average Lines 10, 11, & 12
14	FRBC RE Rate	0.0831		0.0905		0.0771		0.0691		0.0614		0.0619		Fed. Res. Bank of Chicago
15	FRBC OP Rate	0.0923		0.1008		0.0830		0.0713		0.0643		0.0650		Fed. Res. Bank of Chicago
16	Avg. FRBC Rate	0.0877		0.0957		0.0801		0.0702		0.0629		0.0635		Average Lines 14 & 15
17	Operating Market Value In Use	410		627		762		271		1,129		2,173		Line 13 / Line 16

NRTL = Net Return To Land

FRBC = Federal Reserve Bank of Chicago

Doster/Huie -Table 1 Updated - August, 2006		A		B		C		D		E		F		G		H																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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Source: Publication titled "A Method for Assessing Indiana Cropland-An Income Approach to Value" dated June 24, 1999

Indiana Corn Yields:

1982	126
1983	73
1984	117
1985	123
1986	122
1987	135
1988	83
1989	133
1990	129
1991	92
1992	147
1993	132
1994	144
1995	113
1996	123
1997	122
1998	137

1999	132
2000	146
2001	156
2002	121
2003	146
2004	168

2005**IASS has not published yet.****Indiana Soybean Yields:**

1982	38.5
1983	31
1984	34.5
1985	41.5
1986	37
1987	40
1988	27.5
1989	36.5
1990	41
1991	39
1992	43
1993	46
1994	47
1995	39.5
1996	38
1997	43.5
1998	42

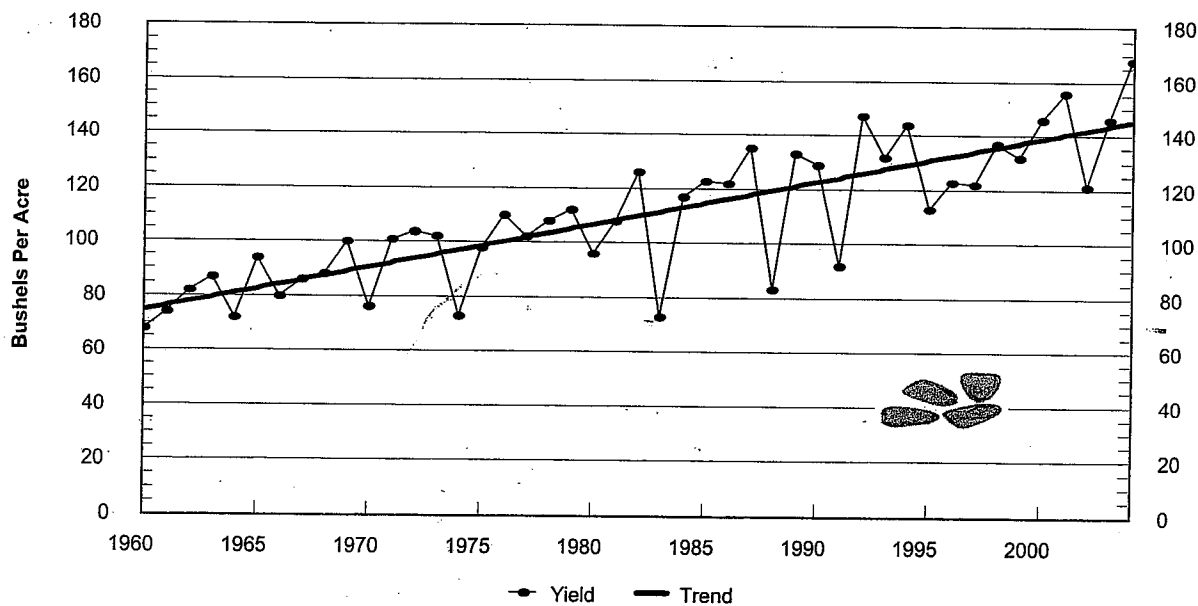
1999	39
2000	46
2001	49
2002	41.5
2003	38
2004	52

CROP SUMMARY

CORN FORECAST AND FINAL YIELD INDIANA, 1981-2004

Year	August Forecast	September Forecast	October Forecast	November Forecast	Final Yield Per Acre
	Yield (Bu)	Yield (Bu)	Yield (Bu)	Yield (Bu)	(Bushels)
1981	94	100	106	108	108
1982	125	125	125	129	126
1983	92	75	74	70	73
1984	112	114	114	115	117
1985	115	123	124	124	123
1986	132	129	127	124	122
1987	135	135	135	135	135
1988	70	74	74	78	83
1989	123	128	130	134	133
1990	128	132	132	130	129
1991	98	93	94	94	92
1992	130	130	133	143	147
1993	140	136	133	128	132
1994	132	132	137	141	144
1995	135	125	119	116	113
1996	118	118	120	124	123
1997	127	122	120	120	122
1998	136	139	137	137	137
1999	130	128	128	130	132
2000	155	155	151	147	146
2001	147	152	160	160	156
2002	124	119	117	117	121
2003	144	145	148	150	146
2004	156	157	167	169	168

Indiana Corn Yield Trend Indiana: 1960 - 2004

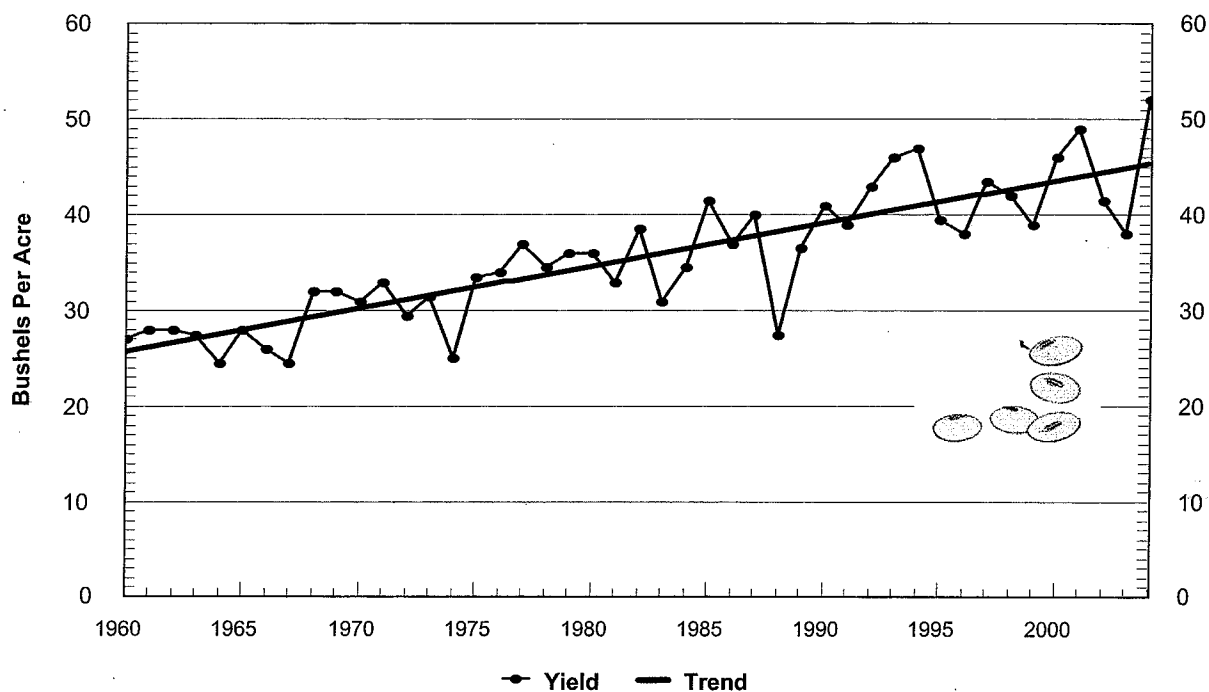


CROP SUMMARY

SOYBEAN FORECAST AND FINAL YIELD INDIANA, 1981-2004

Year	August Forecast	September Forecast	October Forecast	November Forecast	Final Yield Per Acre
	Yield (Bu)	Yield (Bu)	Yield (Bu)	Yield (Bu)	(Bushels)
1981	32.0	33.0	33.0	33.0	33.0
1982	41.0	40.0	40.0	40.0	38.5
1983	33.0	28.0	30.0	30.0	31.0
1984	35.0	36.0	35.0	34.0	34.5
1985	35.0	38.0	40.0	41.0	41.5
1986	40.0	39.0	39.0	38.0	37.0
1987	42.0	41.0	40.0	40.0	40.0
1988	29.0	30.0	30.0	28.0	27.5
1989	39.0	39.0	39.0	39.0	36.5
1990	36.0	37.0	39.0	41.0	41.0
1991	35.0	35.0	38.0	39.0	39.0
1992	41.0	41.0	41.0	42.0	43.0
1993	45.0	47.0	47.0	45.0	46.0
1994	43.0	43.0	46.0	46.0	47.0
1995	43.0	44.0	40.0	39.0	39.5
1996	35.0	35.0	38.0	39.0	38.0
1997	44.0	42.0	42.0	44.0	43.5
1998	45.0	45.0	42.0	42.0	42.0
1999	41.0	40.0	39.0	38.0	39.0
2000	46.0	46.0	46.0	46.0	46.0
2001	46.0	48.0	49.0	49.0	49.0
2002	41.0	41.0	40.0	41.0	41.5
2003	43.0	43.0	40.0	38.0	38.0
2004	45.0	45.0	51.0	53.0	52.0

Indiana Soybean Yield Trend
Indiana: 1960 - 2004



Corn Prices

Source: Indiana Agricultural Statistics

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average	Marketing Average *
1988	1.88	1.91	1.97	1.99	2.10	2.51	2.90	2.86	2.78	2.62	2.56	2.65	2.39	2.08
1989	2.72	2.64	2.70	2.66	2.70	2.63	2.65	2.48	2.38	2.32	2.28	2.37	2.54	2.65
1990	2.46	2.43	2.49	2.68	2.81	2.85	2.81	2.75	2.44	2.21	2.18	2.25	2.53	2.47
1991	2.35	2.37	2.43	2.42	2.46	2.37	2.34	2.41	2.37	2.36	2.36	2.44	2.39	2.31
1992	2.55	2.55	2.61	2.58	2.55	2.55	2.36	2.18	2.18	1.92	1.95	1.96	2.33	2.45
1993	2.06	2.04	2.17	2.23	2.20	2.17	2.31	2.37	2.26	2.26	2.52	2.73	2.28	2.09
1994	2.73	2.78	2.76	2.67	2.63	2.66	2.27	2.12	2.18	1.98	1.93	2.12	2.40	2.51
1995	2.25	2.27	2.34	2.41	2.45	2.56	2.76	2.73	2.76	2.85	3.11	3.33	2.65	2.25
1996	3.20	3.42	3.81	4.31	4.52	4.70	4.70	4.55	3.63	2.80	2.69	2.64	3.75	3.38
1997	2.77	2.73	2.86	2.96	2.86	2.73	2.59	2.60	2.60	2.62	2.60	2.61	2.71	2.78
1998	2.66	2.62	2.61	2.46	2.36	2.29	2.17	1.91	1.96	1.97	2.06	2.23	2.28	2.53
1999	2.26	2.20	2.22	2.24	2.15	2.12	1.94	1.97	1.82	1.74	1.75	1.89	2.03	2.11
2000	1.97	2.06	2.08	2.15	2.15	1.95	1.65	1.63	1.67	1.75	1.83	2.06	1.91	1.88
2001	2.03	2.01	2.02	1.98	1.95	1.84	1.97	2.01	1.93	1.83	1.83	1.92	1.94	1.90
2002	1.98	1.99	1.91	1.91	2.05	2.07	2.25	2.58	2.55	2.38	2.41	2.43	2.21	1.98
2003	2.42	2.44	2.44	2.47	2.49	2.44	2.28	2.25	2.27	2.15	2.25	2.46	2.36	2.41
2004	2.50	2.75	2.96	3.07	3.08	2.80	2.57	2.44	2.07	1.88	1.82	1.96	2.49	2.53
2005	2.09	2.00	2.01	1.97	2.02	2.06								

IASS has not published this information yet.

*Marketing average is Sept. of the previous year to Aug. in the current year.

Soybean Prices

Source: Indiana Agricultural Statistics

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average	Marketing Average *
1988	5.89	5.93	6.29	6.81	7.24	8.71	8.95	8.60	8.09	7.64	7.46	7.71	7.44	5.94
1989	7.76	7.44	7.64	7.32	7.37	7.18	6.95	6.26	5.83	5.62	5.74	5.77	6.74	7.55
1990	5.95	5.75	5.77	5.98	6.14	6.08	6.16	6.13	6.08	5.91	5.77	5.74	5.96	5.79
1991	5.76	5.78	5.76	5.82	5.74	5.57	5.40	5.66	5.76	5.52	5.52	5.51	5.65	5.81
1992	5.60	5.69	5.81	5.75	5.96	6.05	5.69	5.52	5.44	5.25	5.37	5.52	5.64	5.68
1993	5.66	5.65	5.77	5.87	5.94	6.03	6.82	6.84	6.17	5.97	6.42	6.75	6.16	5.61
1994	6.67	6.76	6.82	6.70	6.89	6.74	6.19	5.70	5.49	5.33	5.34	5.54	6.18	6.31
1995	5.54	5.50	5.66	5.68	5.70	5.86	6.10	5.98	6.07	6.24	6.61	6.98	5.99	5.53
1996	6.91	7.16	7.13	7.65	7.95	7.72	7.82	8.10	8.02	6.94	6.90	6.98	7.44	6.73
1997	7.31	7.34	7.94	8.38	8.60	8.22	7.71	7.18	6.54	6.62	6.88	6.68	7.45	7.34
1998	6.80	6.73	6.57	6.37	6.41	6.42	6.38	5.74	5.24	5.23	5.49	5.51	6.07	6.59
1999	5.41	4.94	4.71	4.77	4.63	4.50	4.28	4.55	4.54	4.58	4.56	4.56	4.67	5.05
2000	4.65	4.90	5.06	5.18	5.27	5.11	4.62	4.63	4.71	4.51	4.57	4.93	4.85	4.71
2001	4.74	4.53	4.52	4.25	4.43	4.62	4.98	5.15	4.60	4.17	4.18	4.25	4.54	4.61
2002	4.29	4.34	4.56	4.63	4.79	5.05	5.51	5.67	5.53	5.24	5.53	5.61	5.06	4.42
2003	5.62	5.69	5.70	5.92	6.28	6.15	5.87	5.84	6.49	6.90	7.25	7.44	6.26	5.55
2004	7.38	8.38	9.43	9.76	9.62	9.45	8.89	7.18	5.51	5.24	5.22	5.48	7.63	7.67
2005	5.58	5.42	6.01	6.17	6.32	6.76								

IASS has not published this information yet.

*Marketing average is Sept. of the previous year to Aug. in the current year.

CROP PRICES

MONTHLY PRICES RECEIVED BY FARMERS, CROPS INDIANA, 1998-2005 1/

Year	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Marketing Year Avg.
Corn (Dollars per Bushel)													
1998-99	1.96	1.97	2.06	2.23	2.26	2.20	2.22	2.24	2.15	2.12	1.94	1.97	2.11
1999-00	1.82	1.74	1.75	1.89	1.97	2.06	2.08	2.15	2.15	1.95	1.65	1.63	1.88
2000-01	1.67	1.75	1.83	2.06	2.03	2.01	2.02	1.98	1.95	1.84	1.97	2.01	1.90
2001-02	1.93	1.83	1.83	1.92	1.98	1.99	1.91	1.91	2.05	2.07	2.25	2.58	1.98
2002-03	2.55	2.38	2.41	2.43	2.42	2.44	2.44	2.47	2.49	2.44	2.28	2.25	2.41
2003-04	2.27	2.15	2.25	2.46	2.50	2.75	2.96	3.07	3.08	2.80	2.57	2.44	2.53
2004-05	2.07	1.88	1.82	1.96	2.09	2.00	2.01	1.97	2.02	2.06	2/	2/	2/
Soybeans (Dollars per Bushel)													
1998-99	5.24	5.23	5.49	5.51	5.41	4.94	4.71	4.77	4.63	4.50	4.28	4.55	5.05
1999-00	4.54	4.58	4.56	4.56	4.65	4.90	5.06	5.18	5.27	5.11	4.62	4.63	4.71
2000-01	4.71	4.51	4.57	4.93	4.74	4.53	4.52	4.25	4.43	4.62	4.98	5.15	4.61
2001-02	4.60	4.17	4.18	4.25	4.29	4.34	4.56	4.63	4.79	5.05	5.51	5.67	4.42
2002-03	5.53	5.24	5.53	5.61	5.62	5.69	5.70	5.92	6.28	6.15	5.87	5.84	5.55
2003-04	6.49	6.90	7.25	7.44	7.38	8.38	9.43	9.76	9.62	9.45	8.89	7.18	7.67
2004-05	5.51	5.24	5.22	5.48	5.58	5.42	6.01	6.17	6.32	6.76	2/	2/	2/
Wheat (Dollars per Bushel)													
1998-99	2.50	2.37	2.21	2.21	2.33	2.60	2.45	2.28	2.34	2.17	2.37	2.22	2.36
1999-00	2.16	2.08	2.19	2.20	2.05	2.12	1.96	2.26	2.39	2.43	2.21	2.20	2.13
2000-01	2.25	2.02	1.99	2.00	1.99	2.20	2.42	2.44	2.47	2.36	2.00	2.31	2.11
2001-02	2.31	2.34	2.51	2.37	3.13	2.89	2.88	3.33	3.20	3.94	3.46	3.88	2.41
2002-03	2.90	3.06	3.44	3.69	3.89	4.03	3.76	3.32	3.04	3.03	3.03	3.08	3.18
2003-04	3.05	3.07	3.35	3.35	3.53	3.71	4.01	3.91	3.63	3.84	3.81	3.87	3.21
2004-05	3.37	3.29	3.01	3.09	2.90	2.83	3.06	3.22	2.98	3.26	2.97	3.08	2/

1/ Weighted monthly average for market year. 2004 is preliminary.

2/ Data not available.

1999 PURDUE CROP GUIDE*

ESTIMATED PER ACRE CROP BUDGETS

Crop Budgets for Three Yield Levels¹Miami (Low Yield)²

	Miami (Low Yield) ²				Crosby (Average Yield)				Brookston (High Yield)					
	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn ✓	Rot. Corn	Rot. Beans	W
Expected Yield per acre ³	100.7	108.3	34.7	59.5	20.5	124.7	134.1	42.9	67.0	25.5	153.5	165.0	52.8	
Harvest price	<u>\$2.16</u>	<u>\$2.16</u>	<u>\$5.40</u>	<u>\$2.85</u>	<u>\$5.40</u>	<u>\$2.16</u>	<u>\$2.16</u>	<u>\$5.40</u>	<u>\$2.85</u>	<u>\$5.40</u>	<u>\$2.16</u>	<u>\$2.16</u>	<u>\$5.40</u>	
Crop sales	\$218	\$234	\$187	\$170	\$111	\$269	\$290	\$232	\$191	\$138	\$332	\$356	\$285	
Less variable costs														
Fertilizer ⁴	30	28	15	22	7	38	36	18	25	9	47	46	21	
Seed ⁵	20	20	21	13	31	22	22	21	13	31	26	26	21	
Chemicals ⁵	32	32	12		12	32	32	12		12	33	33	12	
Dryer fuel	10	7			2	12	10			2	14	12		
Fuel @ \$.80/gallon	7	7	7	4	4	8	8	8	4	4	9	9	9	
Repairs ⁶	8	8	8	4	4	9	9	9	5	4	10	10	10	
Hauling	6	6	2			8	8	3			10	10	3	
Interest ⁷	6	6	5	3	4	7	7	5	3	4	8	8	6	
Insurance/misc.	13	13	10	5	2	13	13	10	5	2	13	13	10	
Total variable costs	\$132	\$127	\$80	\$51	\$66	\$149	\$145	\$86	\$55	\$68	\$170	\$167	\$92	
Contribution margin ⁸ (Sales - variable costs)	\$86	\$107	\$107	\$119	\$45	\$120	\$145	\$146	\$136	\$70	\$162	\$189	\$193	

¹Harvest prices are higher of January 12, 1998 CBOT closing prices for July wheat - \$.17 basis, December corn - \$.25 basis and November beans - \$.25 basis or Tippecanoe county, 1998 loan rate. Seed, fertilizer, and chemical prices are early January quotes. Estimated yields and costs are for normal yields with average management for three different soils representing low, average, and high productivity. All soil tests for phosphorus and potassium are in the maintenance range and the pH is in the recommended range. The potash recommendations are for a light color loam or silt loam soil with a Cation Exchange Capacity (CEC) of 10. This recommendation will vary with CEC. On each soil, these estimated yields may vary $\pm 10\%$ for weather, $\pm 10\%$ for management, $\pm 10\%$ for plant/harvest date.

²The soils representing low, average and high productivity are eroded Miami, Crosby, and Brookston soils at 1.5, 1.5, and 3% organic matter (Source AY212, "Indiana Soils and Their Properties"). Yields from AY212 have been adjusted to expected trend yields for this year.

³Average yield based on timely plant/harvest date, except soybean double crop yield which is based on July 1 plant date. Other yields as a percent of rotation corn yield (Source: ID-152 "Estimating Potential Yield for Corn, Soybeans and Wheat") — continuous corn 93%, soybeans 32% (no budget shown for drill beans 37%, second year beans 30%), wheat 55% on Miami, 50% on Crosby and 45% on Brookston, and double crop soybeans (South-Central Indiana) 19%.

⁴Fertilizer based on Tri-State Fertilizer recommendations (Source: Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Pounds of N-P₂O₅-K₂O-lime by crop and soil - Continuous corn, 111-37-47-333, 144-46-54-432, 183-57-61-549; rotation corn, 91-40-49-273, 126-50-56-378, 168-61-65-504; rotation beans, 0-28-69-0, 0-34-80-0, 0-42-94-0; wheat, 57-37-42-171, 70-42-45-210, 92-50-47-276; double crop beans, 0-16-29-0, 0-20-36-0, 0-25-46-0. Fertilizer prices per lb. - NH₃ priced @ \$.12, Urea @ \$.20, P₂O₅ @ \$.24, K₂O @ \$.12, Lime @ \$12/ton. 5-10% more nitrogen might be needed on both excessively and poorly drained soils.

⁵Add \$7 per acre for Bt corn seed. Soybean seed prices include \$8 per acre for Round-up Ready varieties. Corn insecticide @ \$14 per acre is included for all corn.

⁶Repairs are based on approximately five year old machinery. For older machinery per acre repairs and downtime cost will be \$6-10 higher, indirect machinery replacement costs below will be lower.

⁷Interest is based on 9% annual rate for 9 months for seed, fertilizer, and chemicals and for 6 months for half the machinery fuel, and repairs, and all the insurance/misc.

⁸Contribution margin, plus government payment not listed above, is the returns to the resources (labor/management, machinery services, and land).

*By D. H. Doster, Agricultural Economics; Parsons, S. D., Agricultural Engineering; Christman, E. P., Agronomy; Brouder, S. M., Agronomy; Nielsen, R. L., Agronomy

Cooperative Extension work in Agriculture and Home Economics, state of Indiana, Purdue University, and U.S. Department of Agriculture cooperating, H.A. Wadsworth, Director, West Lafayette, IN. Issued in furtherance of the acts of May 8 and June 30, 1914. The Cooperative Extension Service of Purdue University is an equal opportunity/equal access institution.

ESTIMATED 1999 PER FARM CROP BUDGETS
 Effect on Earnings For Each of Four Crop Rotations On Three Soil Types
 Using Almost the Same Machinery and Labor
 When Farm Size is Adjusted to Permit Timely Fieldwork

Farm Acres	Low Yield Soil				Average Yield Soil				High Yield Soil			
	900	1000	1200	1200	900	1000	1200	1200	900	1000	1200	1200
	c-c	c-b	c-b c-w	c-b c-w, dc	c-c	c-b	c-b c-w	c-b c-w, dc	c-c	c-b	c-b c-w	c-b c-w, dc
Crops contribution margin ²	\$77400	\$107000	\$130800	\$139800	\$108000	\$145500	\$172600	\$186600	\$145800	\$191000	\$220800	\$240400
Plus government payment ³	11055	13210	21135	21135	13689	16357	25578	25578	16850	20126	30740	30740
Total contribution margin	\$88455	\$120210	\$151935	\$160935	\$121689	\$161857	\$198178	\$212178	\$162650	\$211126	\$251540	\$271140
Annual machinery ⁴	45000	45000	48500	49000	48600	48600	52100	52600	54000	54000	57500	58000
Drying/handling	6300	6300	6300	6300	7200	7200	7200	7200	8100	8100	8100	8100
Family and hired labor ⁵	37000	37000	37000	37000	37000	37000	37000	37000	37000	37000	37000	37000
Land @ 1998 average rent ⁶	88200	98000	117600	117600	109800	122000	146400	146400	137700	153000	183600	183600
Earnings	(\$88045)	(\$66090)	(\$57465)	(\$48965)	(\$80911)	(\$52943)	(\$44522)	(\$31022)	(\$74150)	(\$40974)	(\$34660)	(\$15560)

¹Rotations are as follows: c-c = 900 acres continuous corn, c-b = 500 rotation corn - 500 beans; c-b, c-w = 400 corn - 400 beans plus 200 corn - 200 wheat; c-b, c-w, dc = 400 corn - 400 beans plus 200 corn - 200 wheat, double crop beans.

²Crops contribution margin (cm) is per acre contribution margin x number of acres.

³Expected government payment is 1999 payment rate (\$.35 for corn, \$.637 for wheat) x .85 x FSA yield (assumed here to be 82% of expected rotation corn and wheat yield) x acres of farm corn and wheat base (assumed here to be 50% of farm size for corn base on all farms and 200 acres wheat on 1200 acre farms only).

⁴The same basic machinery set, which is timely for each rotation, is used on all four farms of the same soil type. A drill is added for wheat and a larger combine platform is added for dc beans. Average annual replacement costs were calculated using Purdue Machinery Cost Calculator for timely set of fall plow or chisel tillage. Costs for no-till are about 75% of fall plow tillage. Seven year trading policy assumed for combine and planter, ten year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well drained soils where more days are suitable for spring field work, machinery costs will be lower.

⁵Family living and hired labor is set at \$37,000. In 1997, on 924 farms in the Illinois Farm Business Farm Management Association, family living averaged \$44,588 and off-farm income averaged \$16,368.

⁶Based on cash rent @ \$98/acre on low yield soil, \$122/acre on average yield soil, \$153/acre on high yield soil as reported in the Purdue Agricultural Economics Report, August, 1998.

2000 PURDUE CROP GUIDE* ESTIMATED PER ACRE CROP BUDGETS

Crop Budgets for Three Yield Levels¹

	Low Yield Soil				Average Yield Soil				High Yield Soil				
	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans
Expected yield in bushels per acre ²	102.0	109.7	36.7	60.3	20.8	126.3	135.8	45.5	67.9	25.8	155.4	167.1	56.0
Harvest price per bushel	<u>\$2.15</u>	<u>\$2.15</u>	<u>\$5.40</u>	<u>\$2.62</u>	<u>\$5.40</u>	<u>\$2.15</u>	<u>\$2.15</u>	<u>\$5.40</u>	<u>\$2.62</u>	<u>\$5.40</u>	<u>\$2.15</u>	<u>\$2.15</u>	<u>\$5.40</u>
Crop sales per acre	\$219	\$236	\$198	\$158	\$112	\$272	\$292	\$246	\$178	\$139	\$334	\$359	\$302
Less variable costs per acre:													
Fertilizer ³	32	30	14	22	7	39	38	17	25	9	48	47	21
Seed ⁴	18	18	27	13	31	26	26	27	13	31	26	26	27
Chemicals ⁵	30	16	10		10	34	20	10		10	40	26	10
Dryer fuel	10	7			2	12	10			2	14	12	
Fuel @ \$1.00/gallon	7	7	7	4	4	8	8	8	4	4	9	9	9
Repairs ⁶	8	8	8	4	4	9	9	9	5	4	10	10	10
Hauling	6	7	2	4	1	8	8	3	4	2	9	10	3
Interest ⁷	6	6	5	3	4	7	7	5	3	4	8	8	6
Insurance/misc.	13	13	10	5	2	13	13	10	5	2	13	13	10
Total variable costs per acre	<u>\$130</u>	<u>\$112</u>	<u>\$83</u>	<u>\$55</u>	<u>\$65</u>	<u>\$156</u>	<u>\$139</u>	<u>\$89</u>	<u>\$59</u>	<u>\$68</u>	<u>\$177</u>	<u>\$161</u>	<u>\$96</u>
Contribution margin ⁸ (Sales - variable costs) per acre	\$89	\$124	\$115	\$103	\$47	\$116	\$153	\$157	\$119	\$71	\$157	\$198	\$206

¹Harvest prices are higher of January 12, 2000 CBOT closing prices for July wheat - \$.17 basis, December corn - \$.30 basis and November beans - \$.30 basis or Tippecanoe County, 1999 loan rate. Seed, fertilizer, and chemical prices are early January quotes. Estimated yields and costs are for normal yields with average management for three different soils representing low, average, and high productivity. All soil tests for phosphorus and potassium are in the maintenance range and the pH is in the recommended range. The potash recommendations are for a light color loam or silt loam soil with a Cation Exchange Capacity (CEC) of 10. This recommendation will vary with CEC. On each soil, these estimated yields may vary \pm 10% for weather, \pm 10% for management, \pm 10% for plant/harvest date.

²Average yield based on timely plant/harvest date, except soybean double crop yield which is based on July 1 plant date. Other yields as a percent of rotation corn yield (Source: ID-152 "Estimating Potential Yield for Corn, Soybeans and Wheat") - continuous corn 93%, drill soybeans 33.5% (no budget shown for second year drill beans 31.8% or for 30-inch beans in central Indiana 30.2%), wheat 55% on low yield, 50% on average yield and 45% on high yield soils, and double crop soybeans (South-central Indiana) 19%.

³Fertilizer based on Tri-State Fertilizer recommendations (Source: Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag line needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Pounds of N-P₂O₅-K₂O-lime by crop and soil - Continuous corn, 111-37-47-333, 144-46-54-132, 183-57-61-549; rotation corn, 91-40-49-273, 126-50-56-378, 168-61-65-504; rotation beans, 0-28-69-0, 0-34-80-0, 0-42-94-0; wheat, 57-37-42-171, 70-42-45-210, 92-50-47-276; double crop beans, 0-16-29-0, 0-25-46-0. Fertilizer prices per lb. - NH₃ priced @ \$.13, Urea @ \$.20, P₂O₅ @ \$.20, K₂O @ \$.12, Lime @ \$.12/ton. 5-10% more nitrogen might be needed on both excessively and poorly drained soils.

⁴Add \$7 per acre for Bt corn seed. Soybean seed prices include Round-up Ready varieties. Corn insecticide @ \$14 per acre is included for continuous corn, and should be added to rotation corn in north Indiana. Repairs are based on approximately five year old machinery. For older machinery per acre repairs and downtime cost will be \$6-10 higher, indirect machinery replacement costs below will be lower.

⁵Interest is based on 9% annual rate for 9 months for seed, fertilizer, and chemicals and for 6 months for half the machinery fuel, and repairs, and all the insurance/misc.

⁶Contribution margin, plus government payment not listed above, is the returns to the resources (labor/management, machinery services, and land).

*By D. H. Doster, Agricultural Economics; Parsons, S.D., Agricultural and Biological Engineering; Christman, E. P., Agronomy; Brouder, S. M., Agronomy; Nielsen, R. L., Agronomy

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ESTIMATED PER FARM CROP BUDGETS FOR 2000

Effect on Earnings For Each of Four Crop Rotations On Three Soil Types:
Using Almost the Same Machinery and Labor
When Farm Size is Adjusted to Permit Timely Fieldwork

Farm Acres	Low Yield Soil			Average Yield Soil			High Yield Soil		
	900	1000	1200	900	1000	1200	900	1000	1200
	c-c	c-b	c-b c-w	c-c	c-b	c-b c-w, dc	c-c	c-b	c-b c-w, dc
Crops contribution margin ²	\$80100	\$119500	\$141000	\$104400	\$155000	\$178400	\$141300	\$202000	\$227600
Plus government payment ³	<u>11352</u>	<u>12613</u>	<u>19869</u>	<u>14053</u>	<u>15615</u>	<u>24066</u>	<u>17292</u>	<u>19213</u>	<u>28958</u>
Total contribution margin	\$91452	\$132113	\$160869	\$118453	\$170615	\$202466	\$158592	\$221213	\$256558
Annual overhead costs:									
Machinery replacement ⁴	45000	48500	48500	48600	52100	52600	54000	57500	58000
Drying/handling	6300	6300	6300	7200	7200	7200	8100	8100	8100
Family and hired labor ⁵	37000	37000	37000	37000	37000	37000	37000	37000	37000
Land @ 1999 average rent ⁶	<u>85500</u>	<u>95000</u>	<u>114000</u>	<u>106200</u>	<u>118000</u>	<u>141600</u>	<u>134100</u>	<u>149000</u>	<u>178800</u>
Earnings or (losses)	(\$82348)	(\$54687)	(\$44931)	(\$80547)	(\$43685)	(\$21734)	(\$74608)	(\$30387)	(\$24842)
									(\$5142)

¹Rotations are as follows: c-c = 900 acres continuous corn; c-b = 500 rotation corn - 500 beans; c-b, c-w = 400 corn - 400 beans plus 200 corn - 200 wheat; c-b, c-w, dc = 400 corn - 400 beans plus 200 corn - 200 wheat, double crop beans.

²Crops contribution margin (cm) is per acre contribution margin x number of acres.

³Expected government payment is 2000 payment rate (\$.334 for corn, \$.57 for wheat) x .85 x FSA yield (assumed here to be 81% of expected rotation corn and wheat yield) x acres of farm corn and wheat base (assumed here to be 50% of farm size for corn base on all farms; and 200 acres wheat on 1200 acre farms only).

⁴The same basic machinery set, which is timely for each rotation, is used on all four farms of the same soil type. A no-till drill is added for beans and a larger combine platform is added for dc beans. Average annual replacement costs were calculated using Purdue Machinery Cost Calculator for timely set of fall plow or chisel tillage. Replacement costs for no-till are about 75% of fall chisel tillage. Seven year trading policy assumed for combine and planter, ten year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well drained soils where more days are suitable for spring field work, machinery costs will be lower.

⁵Family living and hired labor is estimated at \$37,000. In 1998, on 912 farms in the Illinois Farm Business Farm Management Association, family living expenses averaged \$44,790 and net nonfarm income averaged \$17,992.

⁶Based on cash rent @ \$95/acre on low yield soil, \$118/acre on average yield soil, \$149/acre on high yield soil as reported in the Purdue Agricultural Economics Report, September, 1999.

2001 PURDUE CROP GUIDE* **ESTIMATED PER ACRE CROP BUDGETS**

ID-166-Revised.

Crop Budgets for Three Yield Levels¹

	Low Yield Soil					Average Yield Soil					High Yield Soil				
	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans
Expected yield in bushels per acre ²	103.0	110.9	37.1	61.0	21.0	127.7	137.3	46.0	68.6	26.1	157.1	168.9	56.6		
Harvest price per bushel	\$2.27	\$2.27	\$5.40	\$2.75	\$5.40	\$2.27	\$2.27	\$5.40	\$2.75	\$5.40	\$2.27	\$2.27	\$5.40		
Crop sales per acre	\$234	\$252	\$200	\$168	\$114	\$290	\$312	\$248	\$189	\$141	\$357	\$383	\$306		
Less variable costs per acre:															
Fertilizer ³	42	39	15	29	9	53	50	18	35	11	65	63	21		
Seed ⁴	24	24	26	13	30	28	28	26	13	30	28	28	26		
Chemicals	31	16	13		9	33	18	13		9	38	23	13		
Dryer fuel @ \$.80/gallon and handling	12	10	1		2	15	13	1		3	18	16	1		
Fuel @ \$1.20/gallon	8	8	8	5	4	10	10	10	5	4	11	11	11		
Repairs ⁵	8	8	8	4	4	9	9	9	5	4	10	10	10		
Hauling	6	7	2	4	1	8	3	3	4	2	9	10	3		
Interest ⁶	8	5	4	3	4	9	8	5	4	4	10	9	5		
Insurance/misc.	11	11	8	7	4	11	11	8	7	4	11	11	8		
Total variable costs per acre	\$150	\$128	\$85	\$65	\$67	\$176	\$155	\$93	\$73	\$71	\$200	\$181	\$98		
Contribution margin ⁷ (Sales - variable costs) per acre	\$84	\$124	\$115	\$103	\$47	\$114	\$157	\$155	\$116	\$70	\$157	\$202	\$208		

¹Harvest prices are the higher of January 17, 2001 CBOT closing prices for July wheat - \$.30 basis, December corn - \$.25 basis and November beans - \$.30 basis or the Tippecanoe County, 2000 loan rate. Seed, fertilizer, and chemical prices are early January quotes. Estimated yields and costs are for normal yields with average management for three different soils representing low, average, and high productivity. All soil tests for phosphorus and potassium are in the maintenance range and the pH is in the recommended range. The potash recommendations are for a light color loam or silt loam soil with a Cation Exchange Capacity (CEC) of 10. This recommendation will vary with CEC. On each soil, these estimated yields may vary \pm 10% for weather, \pm 10% for management, \pm 10% for plant/harvest date.

²Average yield based on timely plant/harvest date, except soybean double crop yield which is based on July 1 plant date. Other yields as a percent of rotation corn yield (Source: ID-152 "Estimating Potential Yield for Corn, Soybeans and Wheat") — continuous corn 93%, drill soybeans 33.5% (second year drill beans or for 30-inch beans in central Indiana 30.2%), wheat 55% on low yield, 50% on average yield and 45% on high yield soils; and double crop soybeans (South-central Indiana) 19%.

³Fertilizer based on Tri-State Fertilizer recommendations (Source: Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Pounds of N-P₂O₅-K₂O-lime by crop and soil - Continuous corn, 114-38-48-343, 148-47-55-443, 188-58-62-563; rotation corn, 95-41-50-285, 131-51-57-392, 174-63-66-521; rotation beans, 0-30-72-0, 0-37-84-0, 0-45-99-0; wheat, 59-38-43-178, 73-43-45-218, 86-48-48-257; double crop beans, 0-17-49-0, 0-21-57-0, 0-26-65-0. Fertilizer prices per lb. - NH₃ @ \$.22, urea @ \$.27, P₂O₅ @ \$.18, after accounting for nitrogen @ \$.22 in 18-46-0, K₂O @ \$.13, lime @ \$.12/ton. 5-10% more nitrogen might be needed on both excessively and poorly drained soils.

⁴Add \$7 per acre for Bt corn seed. Soybean seed prices include Round-up Ready varieties. Corn insecticide @ \$15 per acre is included for continuous corn, and should be added to rotation corn in north Indiana.

⁵Repairs are based on approximately five year old machinery. For older machinery per acre repairs and downtime cost will be \$6-10 higher, and indirect machinery replacement costs below will be lower.

⁶Interest is based on 9.5% annual rate for 9 months for seed, fertilizer, and chemicals and for 6 months for half the machinery fuel, and repairs, and all the insurance/misc.

⁷Contribution margin is the returns to the unpaid operator labor/management, machinery services, and land resources. The contribution margins, not shown above, are \$97, \$134, and \$179 for second year drill beans on low, average and high yield soils.

*By D. H. Doster, Agricultural Economics; Parsons, S.D., Agricultural and Biological Engineering; Christman, E. P., Agronomy; Brouder, S. M., Agronomy; Nielsen, R. L., Agronomy

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ESTIMATED PER FARM CROP BUDGETS FOR 2001
 Effect on Earnings For Each of Four Crop Rotations On Three Soil Types
 Using Almost the Same Machinery and Labor
 After Farm Size has been Adjusted to Permit Timely Fieldwork

Farm Acres	Low Yield Soil			Average Yield Soil			High Yield Soil		
	900	1000	1200	900	1000	1200	900	1000	1200
Rotation ¹	c-c	c-b	c-b c-w, dc	c-c	c-b	c-b c-w	c-c	c-b	c-b c-w, dc
Crops contribution margin ²	\$75600	\$119500	\$141000	\$102600	\$156000	\$179400	\$141300	\$205000	\$230400
Plus government payment ³	9128	12740	18181	11301	15777	22067	13900	19405	26602
Total contribution margin	\$84728	\$132340	\$159181	\$113901	\$171777	\$201467	\$155200	\$224405	\$257002
Annual overhead costs:									
Machinery replacement ⁴	45000	48500	49000	48600	52100	52100	54000	57500	58000
Drying/handling	6300	6300	6300	7200	7200	7200	8100	8100	8100
Family and hired labor ⁵	37000	37000	37000	37000	37000	37000	37000	37000	37000
Land @ 2000 average rent ⁶	88200	98000	117600	108900	121000	145200	135000	150000	180000
Earnings or (losses)	(\$91772)	(\$57460)	(\$40730)	(\$87799)	(\$45523)	(\$40033)	(\$78900)	(\$28195)	(\$25598)

¹Rotations are as follows: c-c = 900 acres continuous corn; c-b = 500 rotation corn - 500 beans; c-b, c-w = 400 corn - 400 beans plus 200 corn - 200 wheat; c-b, c-w, dc = 400 corn - 400 beans plus 200 corn - 200 wheat, double crop beans (dc).

²Crops contribution margin is per acre contribution margin x number of acres.

³Expected government payment is 2001 payment rate (\$.269 for corn, \$.474 for wheat) x .85 x FSA yield (assumed here to be 80% of expected rotation corn and wheat yield) x acres of farm corn and wheat base (assumed here to be 50% of farm size for corn base on all farms and 200 acres wheat on 1200 acre farms only), plus \$.14 per bushel soybean oilseed payment.

⁴The same basic machinery set, which is timely for each rotation, is used on all four farms of the same soil type. A no-till drill is added for beans and a larger combine platform is added for double-crop beans. Average annual replacement costs were calculated using the Purdue Machinery Cost Calculator for timely set of fall plow or chisel tillage. Replacement costs for no-till are about 75% of fall chisel tillage. Seven year trading policy assumed for combine and planter, ten year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well drained soils where more days are suitable for spring field work, machinery costs could be lower.

⁵Family living and/or hired labor is estimated at \$37,000. In 1999, on 938 farms in the Illinois Farm Business Farm Management Association, family living expenses averaged \$45,225 and net nonfarm income averaged \$19,170.

⁶Based on cash rent @ \$98/acre on low yield soil, \$121/acre on average yield soil, \$150/acre on high yield soil as reported in the Purdue Agricultural Economics Report, September, 2000.

2002 PURDUE CROP GUIDE*
ESTIMATED PER ACRE CROP BUDGETS

Crop Budgets for Three Yield Levels¹

	Low Yield Soil				Average Yield Soil				High Yield Soil						
	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans
Expected yield in bushels per acre ²	104.3	112.1	37.5	61.6	21.3	129.1	138.8	46.5	69.4	26.4	158.8	170.8	57.2	76.9	32.4
Harvest price per bushel ³	\$2.10	\$2.10	\$5.40	\$2.56	\$5.40	\$2.10	\$2.10	\$5.40	\$2.56	\$5.40	\$2.10	\$2.10	\$5.40	\$2.56	\$5.40
Crop sales per acre	\$219	\$235	\$203	\$158	\$115	\$271	\$291	\$251	\$178	\$143	\$333	\$359	\$309	\$197	\$175
Less variable costs per acre ⁴ :															
Fertilizer ⁵	\$38	\$35	\$17	\$30	\$11	\$47	\$45	\$20	\$35	\$12	\$57	\$56	\$24	\$40	\$15
Seed ⁶	26	26	30	13	35	30	30	30	13	35	30	30	30	13	35
Chemicals ⁷	31	16	14	N/A	12	34	18	14	N/A	12	38	23	14	N/A	12
Dryer fuel @ \$.80/gallon and handling	12	10	1	N/A	2	15	13	1	N/A	3	18	15	1	N/A	3
Fuel @ \$.95/gallon	7	7	7	4	3	8	8	8	4	3	9	9	9	4	3
Repairs ⁸	8	8	8	4	4	9	9	9	5	4	10	10	10	5	4
Hauling	6	7	2	4	1	8	8	3	4	2	10	10	3	5	2
Interest ⁹	5	4	3	2	3	6	5	4	3	3	7	6	4	3	3
Insurance/misc.	11	11	8	7	4	11	11	8	7	4	11	11	8	7	4
Total variable costs per acre	\$144	\$124	\$90	\$64	\$25	\$168	\$147	\$97	\$71	\$28	\$190	\$170	\$103	\$77	\$81
Contribution margin ¹⁰ (Sales - variable costs) per acre	\$75	\$111	\$113	\$94	\$40	\$103	\$144	\$154	\$107	\$65	\$143	\$189	\$206	\$120	\$94

¹ Estimated yields and costs are for normal yields with average management for three different soils representing low, average, and high productivity.

² Average yield based on timely plant/harvest date, except soybean double crop yield which is based on July 1 plant date. Continuous corn, soybean & wheat yields are a percent of rotation corn yield — continuous corn 93%, drill soybeans 33.5% (second year drill beans or for 30-inch beans in central Indiana 30.2%), wheat 55% on low yield, 50% on average yield and 45% on high yield soils, and double crop soybeans (South-central Indiana) 19% (Source: ID-152 "Estimating Potential Yield for Corn, Soybeans and Wheat").

³ Harvest prices are the higher of December 31, 2001 CBOT closing prices for July wheat — \$.30 basis, December corn — \$.25 basis, and November beans — \$.30 basis or the Tippecanoe County, 2001 loan rate.

⁴ Seed, fertilizer, and chemical prices are early January quotes.

⁵ Fertilizer based on tri-state fertilizer recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Pounds of N-P₂O₅-K₂O-lime by crop and soil: Continuous corn, 116-39-48-347, 150-48-55-449, 190-59-63-570; rotation corn, 97-42-50-290, 133-51-58-398, 176-63-66-529; rotation beans, 0-30-72-0, 0-37-85-0, 0-45-100-0; wheat, 60-39-43-181, 74-44-46-227, 87-48-48-261; double crop beans, 0-17-50-0, 0-21-57-0, 0-26-65-0. Fertilizer prices per lb.: NH₃ @ \$.16; urea @ \$.23; P₂O₅ @ \$.23, after accounting for nitrogen @ \$.16 in 18-46-0; K₂O @ \$.13; lime @ \$.14/ton. 5-10% more nitrogen might be needed on both excessively and poorly drained soils. All soil tests for phosphorus and potassium are in the maintenance range, and the pH is in the recommended range. The potash recommendations are for a light color loam or silt loam soil with a Cation Exchange Capacity (CEC) of 10. This recommendation will vary with CEC. On each soil, these estimated yields may vary ± 10% for weather, ± 10% for management, and ± 10% for plant/harvest date.

⁶ Add \$.7 per acre for Bt corn seed. Soybean seed prices include Round-up Ready varieties.

⁷ Corn insecticide @ \$.16 per acre is included for continuous corn, and should be added to rotation corn in north Indiana.

⁸ Repairs are based on approximately five-year-old machinery. For older machinery, per acre repairs and downtime cost will be \$6-10 higher, and indirect machinery replacement costs below will be lower.

⁹ Interest is based on 6.5% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs, and all the insurance/misc.

¹⁰ Contribution margin is the return to the unpaid operator labor/management, machinery services, and land resources. The contribution margins, not shown above, are \$95, \$132, and \$177 for second year drill beans on low, average, and high yield soils.

*By C. L. Dobbins, Miller, W. A., Doster, D. H., Agricultural Economics; Christmas, E. P., Nielsen, R. L., Agronomy

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ESTIMATED PER FARM CROP BUDGETS FOR 2002
 Effect on Earnings for Each of Four Crop Rotations on Three Soil Types
 Using Almost the Same Machinery and Labor
 After Farm Size Has Been Adjusted to Permit Timely Fieldwork

	Low Yield Soil				Average Yield Soil				High Yield Soil			
	900	1000	1200	1200	900	1000	1200	1200	900	1000	1200	1200
	c-c	c-b	c-b	c-w, dc	c-c	c-b	c-b	c-w, dc	c-c	c-b	c-b	c-w, dc
Farm Acres												
Rotation ¹												
Crops contribution margin ²	\$67500	\$112000	\$130600	\$138600	\$92700	\$149000	\$169400	\$182400	\$128700	\$197500	\$219800	\$238600
Plus government payment ³	8955	12575	17887	19483	11081	15568	21710	22449	13637	19156	26185	27092
Total contribution margin	\$76455	\$124575	\$148487	\$157083	\$103781	\$164568	\$191110	\$204849	\$142337	\$216656	\$245985	\$265692
Annual overhead costs:												
Machinery replacement ⁴	45000	48500	48500	49000	48600	52100	52100	52600	54000	57500	57500	58000
Drying/handling	6300	6300	6300	6300	7200	7200	7200	7200	8100	8100	8100	8100
Family and hired labor ⁵	37000	37000	37000	37000	37000	37000	37000	37000	37000	37000	37000	37000
Land @ 2001 average rent ⁶	88200	98000	117600	117600	109800	122000	146400	146400	136800	152000	182400	182400
Earnings or (losses)	(\$100045)	(\$65225)	(\$60913)	(\$52817)	(\$98819)	(\$53732)	(\$51590)	(\$38351)	(\$93563)	(\$37944)	(\$39015)	(\$19808)

¹Rotations are as follows: c-c = 900 acres continuous corn; c-b = 500 rotation corn - 500 beans; c-b, c-w = 400 corn - 400 beans plus 200 corn - 200 wheat, double crop beans (dc).

²Crops contribution margin is per acre contribution margin x number of acres.

³Expected government payment is 2002 payment rate (\$261 for corn, \$459 for wheat) x .85 x FSA yield (assumed here to be 80% of expected rotation corn and wheat yield) x acres of farm corn and wheat base (assumed here to be 50% of farm size for corn base on all farms and 200 acres wheat on 1200 acre farms only), plus \$.14 per bushel soybean oilseed payment.

⁴The same basic machinery set, which is timely for each rotation, is used on all four farms of the same soil type. A no-till drill is added for beans, and a larger combine platform is added for double-crop beans. Average annual replacement costs were calculated using the Purdue Machinery Cost Calculator for timely set of fall plow or chisel tillage. Replacement costs for no-till are about 75% of fall chisel tillage. Seven year trading policy assumed for combine and planter, ten year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well drained soils where more days are suitable for spring field work, machinery costs could be lower.

⁵Family living and/or hired labor is estimated at \$37,000. In 2000, on 1,087 farms in the Illinois Farm Business Farm Management Association, family living expenses averaged \$47,526 and net nonfarm income averaged \$22,424.

⁶Based on cash rent @ \$98/acre on low yield soil, \$122/acre on average yield soil, \$152/acre on high yield soil (Source: Purdue Agricultural Economics Report, September, 2001).

Purdue Crop Cost & Return Guide January 2003
Table 1. Estimated Per Acre Crop Budgets

	Crop Budgets for Three Yield Levels ¹									
	Miami (Low Yield)					Crosby (Average Yield)				
	Cont. Corn	Rot. Corn	Rot. Beans	Second- Year Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Second- Year Beans
Expected yield per acre ²	105.4	113.4	37.9	34.1	62.3	21.5	130.5	140.3	47.0	42.3
Harvest price ³	\$2.16	\$2.16	\$4.83	\$4.83	\$2.71	\$4.83	\$2.16	\$2.16	\$4.83	\$2.71
Market Revenue	\$228	\$245	\$183	\$165	\$169	\$104	\$282	\$303	\$227	\$204
Loan Deficiency Payment (LDP) ⁴	0	0	12	11	0	7	0	0	15	13
Total revenue	\$228	\$245	\$195	\$176	\$169	\$111	\$282	\$303	\$242	\$217
Less variable costs ⁵										
Fertilizer ⁶	\$42	\$38	\$16	\$15	\$31	\$10	\$52	\$49	\$20	\$18
Seed ⁷	26	30	30	30	16	35	30	30	30	30
Chemicals ⁸	31	16	15	15	N/A	13	34	18	15	15
Dryer Fuel & Handling	14	12	1	1	N/A	2	17	15	1	1
Machinery Fuel	8	8	8	8	5	4	10	10	10	10
Machinery Repairs ⁹	8	8	8	8	4	4	9	9	9	9
Hauling	6	7	2	2	4	1	8	8	3	3
Interest ¹⁰	4	4	3	3	2	3	5	4	3	3
Insurance/misc.	11	11	8	8	7	4	11	11	8	8
Total variable cost	\$150	\$130	\$91	\$90	\$69	\$76	\$176	\$154	\$99	\$87
Contribution margin ¹¹ (Revenue - variable costs) per acre	\$78	\$115	\$104	\$86	\$100	\$35	\$106	\$149	\$143	\$120
Estimated yields and costs are for normal yields with average management for three different soils representing low, average, and high productivity. On each soil, these estimated yields may vary + 10% for management, and ± 10% for plant/harvest date. These yields assume normal weather conditions.										
² Average yield based on timely plant/harvest date, except soybean double crop yield which is based on July 1 plant date. Continuous corn, soybean & wheat yields are a percent of rotation corn yield - continuous corn 93%, drill soybeans 33.5% (second year drill beans or for 30-inch beans in central Indiana 30.2%), wheat 55% on low yield, 50% on average yield, and 45% on high yield soils, and double crop soybeans (South-central Indiana) 19% (Source: ID-152 "Estimating Potential Yield for Corn, Soybeans, and Wheat")										
³ Harvest corn price is closing December 2003 CBOT futures price on December 27, 2002, less \$0.25 basis. Harvest soybean price is closing November 2003 CBOT price on December 27, 2002, less \$0.30 basis. Harvest wheat price is closing July 2003 CBOT price on December 27, 2002, less \$0.30 basis.										
⁴ Loan Deficiency Payment is paid on all bushels produced. The per bushel payment is the amount by which the loan rate exceeds the market price. Loan rates are \$2.05 for corn, \$5.14 for soybeans, and \$2.52 for wheat.										
⁵ Seed, fertilizer, and chemical prices are early January 2003 quotes.										
⁶ Fertilizer based on tri-state fertilizer recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Pounds of N-P ₂ O ₅ -K ₂ O-lime by crop and soil: Continuous corn, 117-39-48-352, 152-48-55-454, 192-59-63-577; rotation corn, 98-42-51-284, 135-52-58-407, 179-64-67-536; rotation beans, 0-30-73-0, 0-37-86-0, 0-46-101-0; wheat, 62-39-43-185, 75-44-46-227, 89-49-49-265; double crop beans, 0-17-50-0, 0-21-57-0, 0-26-66-0. Fertilizer prices per lb.: NH ₃ @ \$.19; urea @ \$.25; P ₂ O ₅ @ \$.22; K ₂ O @ \$.13; lime @ \$.14/ton. 5-10% more nitrogen might be needed on both excessively and poorly drained soils. All soil tests for phosphorus and potassium are in the maintenance range, and the pH is in the recommended range.										
⁷ The potash recommendations are for a light color loam or silt loam soil with a Cation Exchange Capacity (CEC) of 10. This recommendation will vary with CEC.										
⁸ Add \$7 per acre for Bt corn seed. Soybean seed prices include round-up Ready varieties										
⁹ Corn insecticide @ \$16 per acre is included for continuous corn and should be added to rotation corn in northern Indiana.										
¹⁰ Repairs are based on approximately five-year-old machinery. For older machinery, per acre repairs and downtime cost will be \$6-10 higher, and indirect machinery costs will be lower.										
¹¹ Interest is based on 5.5% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs, and all the insurance/misc.										
¹² Contribution margin is the return to the unpaid operator labor/management, machinery services, and land resources.										

Brookston (High Yield)

Cont. Corn	Rot. Corn	Rot. Beans	Second- Year Beans	Wheat	DC Beans
160.6	172.7	57.9	52.1	77.7	32.8
\$2.16	\$2.16	\$4.83	\$4.83	\$2.71	\$4.83
\$347	\$373	\$280	\$252	\$211	\$158
\$347	\$373	\$298	\$268	\$211	\$168

Cont. Corn \$64, Rot. Corn \$63, Rot. Beans \$24, Second-Year Beans \$21, Wheat \$41, DC Beans \$14

Estimated yields and costs are for normal yields with average management for three different soils representing low, average, and high productivity. On each soil, these estimated yields may vary + 10% for management, and ± 10% for plant/harvest date. These yields assume normal weather conditions.

²Average yield based on timely plant/harvest date, except soybean double crop yield which is based on July 1 plant date. Continuous corn, soybean & wheat yields are a percent of rotation corn yield - continuous corn 93%, drill soybeans 33.5% (second year drill beans or for 30-inch beans in central Indiana 30.2%), wheat 55% on low yield, 50% on average yield, and 45% on high yield soils, and double crop soybeans (South-central Indiana) 19% (Source: ID-152 "Estimating Potential Yield for Corn, Soybeans, and Wheat")

³Harvest corn price is closing December 2003 CBOT futures price on December 27, 2002, less \$0.25 basis. Harvest soybean price is closing November 2003 CBOT price on December 27, 2002, less \$0.30 basis. Harvest wheat price is closing July 2003 CBOT price on December 27, 2002, less \$0.30 basis.

⁴Loan Deficiency Payment is paid on all bushels produced. The per bushel payment is the amount by which the loan rate exceeds the market price. Loan rates are \$2.05 for corn, \$5.14 for soybeans, and \$2.52 for wheat.

⁵Seed, fertilizer, and chemical prices are early January 2003 quotes.

⁶Fertilizer based on tri-state fertilizer recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Pounds of N-P₂O₅-K₂O-lime by crop and soil: Continuous corn, 117-39-48-352, 152-48-55-454, 192-59-63-577; rotation corn, 98-42-51-284, 135-52-58-407, 179-64-67-536; rotation beans, 0-30-73-0, 0-37-86-0, 0-46-101-0; wheat, 62-39-43-185, 75-44-46-227, 89-49-49-265; double crop beans, 0-17-50-0, 0-21-57-0, 0-26-66-0. Fertilizer prices per lb.: NH₃ @ \$.19; urea @ \$.25; P₂O₅ @ \$.22; K₂O @ \$.13; lime @ \$.14/ton. 5-10% more nitrogen might be needed on both excessively and poorly drained soils. All soil tests for phosphorus and potassium are in the maintenance range, and the pH is in the recommended range.

⁷The potash recommendations are for a light color loam or silt loam soil with a Cation Exchange Capacity (CEC) of 10. This recommendation will vary with CEC.

⁸Add \$7 per acre for Bt corn seed. Soybean seed prices include round-up Ready varieties

⁹Corn insecticide @ \$16 per acre is included for continuous corn and should be added to rotation corn in northern Indiana.

¹⁰Repairs are based on approximately five-year-old machinery. For older machinery, per acre repairs and downtime cost will be \$6-10 higher, and indirect machinery costs will be lower.

¹¹Interest is based on 5.5% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs, and all the insurance/misc.

¹²Contribution margin is the return to the unpaid operator labor/management, machinery services, and land resources.

Purdue Crop Cost & Return Guide January 2003

Table 2. Estimated Per Farm Crop Budgets For 2003 - January Estimates

Effect on Earnings for Each of Four Crop Rotations on Three Soil Types Using Similar Machinery and Labor When Farm Size is Adjusted to Permit Timely Fieldwork ¹												
Farm Acres Rotation	(Miami) Low Yield Soils				(Crosby) Average Yield Soils				(Brookston) High Yield Soils			
	900 c-c	1000 c-b	1200 c-b, c-w	1200 c-b, c-w, dc	900 c-c	1000 c-b	1200 c-b, c-w	1200 c-b, c-w, dc	900 c-c	1000 c-b	1200 c-b, c-w	1200 c-b, c-w, dc
Crop contribution margin ²	\$70,200	\$109,500	\$130,600	\$137,600	\$95,400	\$146,000	\$169,400	\$180,800	\$129,600	\$192,500	\$218,000	\$235,200
Government payment ³	24,372	22,855	32,508	32,508	28,773	27,085	37,958	37,958	35,532	33,450	45,612	45,612
Total contribution margin	\$94,572	\$132,355	\$163,108	\$170,108	\$124,173	\$173,085	\$207,358	\$218,758	\$165,132	\$225,950	\$263,612	\$280,812
Annual overhead costs:												
Machinery replacement ⁴	45,000	48,500	48,500	49,000	48,600	52,100	52,100	52,600	54,000	57,500	57,500	58,000
Drying/handling	6,300	6,300	6,300	6,300	7,200	7,200	7,200	7,200	8,100	8,100	8,100	8,100
Family and hired labor ⁵	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000
Land ⁶	\$90,900	\$101,000	\$121,200	\$121,200	\$112,500	\$125,000	\$150,000	\$150,000	\$138,600	\$154,000	\$184,800	\$184,800
Earnings or (losses)	\$ (84,628)	\$ (60,445)	\$ (49,892)	\$ (43,392)	\$ (81,127)	\$ (48,215)	\$ (38,942)	\$ (28,042)	\$ (72,568)	\$ (30,650)	\$ (23,788)	\$ (7,088)

¹Rotations are as follows: c-c = 900 acres continuous corn; c-b = 500 acres rotation corn - 500 acres soybeans; c-b, c-w = 400 acres corn - 400 acres soybeans plus 200 acres corn - 200 acres wheat; c-b, c-w, dc = 400 acres soybeans plus 200 acres corn - 200 acres wheat, double crop beans (dc).

²Crops contribution margin is per acre contribution margin from Table 1 times number of acres.

³Government payment includes the direct payment and the counter cyclical payment. The per bushel direct payment rate is \$0.28 for corn, \$0.44 for soybeans and \$0.54 for wheat. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Direct payment yields for wheat were 45.8, 49.3, 55.5 on low, average, and high soils. The counter cyclical payments were based on a target price of \$2.60 for corn, \$5.80 for soybeans, and \$3.86 for wheat. The average marketing year price assumed was \$2.27 for corn, \$5.07 for soybeans, and \$2.90 for wheat. The counter cyclical yields for corn were 108.1, 133.4, and 164.1 for low, average, and high soils. The counter cyclical yields for soybeans were 36.2, 44.7, and 55.0 for low, average and high soils. The counter cyclical yields for wheat were 59.5, 66.7, 73.8 for low, average, and high soils. A base acre of each acre of crop raised was assumed.

⁴The same basic machinery set, which is timely for each rotation, is used on all four farms of the same soil type. A no-till drill is added for beans, and a larger combine platform is added for double-crop beans. Average annual replacement costs were calculated using the Purdue Machinery Cost Calculator for timely set of fall plow or chisel tillage. Replacement costs for no-till are about 75% of fall chisel tillage. Seven year trading policy assumed for combine and planter, ten year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well drained soils where more days are suitable for spring field work, machinery costs could be lower.

⁵Labor expenses include a family living withdrawal of \$24,723 (\$48,087 of family living expenses less \$23,374 in net nonfarm income reported by Illinois Farm Business Farm Management Association records in 2001) and \$12,000 for hired labor.

⁶Based on cash rent at \$101 per acre on low yield soil, \$125 per acre on average yield soil, and \$154 on high yield soil.

Purdue Crop Cost & Return Guide January 2004
Table 1. Estimated Per Acre Crop Budgets

	Crop Budgets for Three Yield Levels ¹									
	Miami (Low Yield)					Crosby (Average Yield)				
	Cont. Corn	Rot. Corn	Rot. Beans	Second- Year Beans	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Second- Year Beans	DC Beans
Expected yield per acre ²	106.6	114.6	37.1	33.4	61.0	131.9	141.9	46.0	41.4	68.6
Harvest price ³	\$2.29	\$2.29	\$6.14	\$6.14	\$3.56	\$2.29	\$2.29	\$6.14	\$6.14	\$3.56
Market Revenue	\$244	\$262	\$228	\$205	\$217	\$302	\$325	\$282	\$254	\$244
Loan Deficiency Payment (LDP) ⁴	0	0	0	0	0	0	0	0	0	0
Total revenue	\$244	\$262	\$228	\$205	\$217	\$302	\$325	\$282	\$254	\$244
Less variable costs ⁵										
Fertilizer ⁶	\$50	\$46	\$18	\$17	\$37	\$62	\$60	\$22	\$20	\$43
Seed ⁷	28	28	33	33	20	33	33	33	33	20
Chemicals ⁸	32	16	16	16	N/A	34	19	16	16	N/A
Dryer Fuel & Handling	14	12	1	1	N/A	18	15	1	1	N/A
Machinery Fuel @ \$1.20	8	8	8	8	5	4	10	10	10	5
Machinery Repairs ⁹	8	8	8	8	4	9	9	9	9	5
Hauling	6	7	2	2	4	8	9	3	2	4
Interest ¹⁰	5	4	3	3	3	6	5	4	3	3
Insurance/misc.	11	11	8	8	7	11	11	8	8	4
Total variable cost	\$162	\$140	\$97	\$96	\$80	\$191	\$171	\$106	\$102	\$88
Contribution margin ¹¹ (Revenue - variable costs) per acre	\$82	\$122	\$131	\$109	\$137	\$111	\$154	\$176	\$152	\$156

¹Estimated yields and costs are for normal yields with average management for three different soils representing low, average, and high productivity. On each soil, these estimated yields may vary \pm 10% for management, and \pm 10% for plant/harvest date. These yields assume normal weather conditions.

²Average yield based on timely plant/harvest date, except soybean double crop yield, which is based on July 1 plant date. Continuous corn, soybean, and wheat yields are a percent of rotation corn yield: continuous corn 83%, drill soybeans 33.5% (second year drill beans or for 30-inch beans in central Indiana 30.2%); wheat 55% on low yield, 50% on average yield, and 45% on high yield soils; and double crop soybeans (South-central Indiana) 19% (Source: ID-152 "Estimating Potential Yield for Corn, Soybeans, and Wheat").

³Harvest corn price is December 2004 CBOT opening futures price on January 6, 2004 less \$0.25 basis. Harvest soybean price is November 2004 CBOT opening futures price on January 6, 2004, less \$0.30 basis. Harvest wheat price is July 2004 CBOT opening futures price quoted on January 5, 2004, less \$0.30 basis.

⁴Loan Deficiency Payment is paid on all bushels produced. The per bushel payment is the amount by which the loan rate exceeds the market price. Loan rates are \$2.01 for corn, \$5.12 for soybeans, and \$2.49 for wheat.

⁵Seed, fertilizer, chemical, and fuel prices are early January 2004 quotes.

⁶Fertilizer based on tri-state fertilizer recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Pounds of N-P₂O₅-K₂O-lime by crop and soil: continuous corn, 119-39-49-357; 153-49-56-460; 195-60-64-585; rotation corn, 100-42-51-300; 137-52-58-411; 182-65-67-544; rotation beans, 0-31-74-0; 0-47-102-0; wheat, 63-40-43-188, 77-45-46-230, 90-49-49-270; double crop beans, 0-17-50-0, 0-22-58-0, 0-26-88-0. Fertilizer prices per lb.: NH₃ @ \$0.24; urea @ \$0.32; P₂O₅ @ \$0.28; K₂O @ \$0.14; lime @ \$16/ton. 5-10% more nitrogen might be needed on both excessively and poorly drained soils. All soil tests for phosphorus and potassium are in the maintenance range, and the pH is in the recommended range.

⁷Add \$7 per acre for Bt corn seed. Soybean seed prices include Round-Up Ready varieties.

⁸Corn insecticide @ \$16 per acre is included for continuous corn and should be added to rotation corn in northern Indiana.

⁹Repairs are based on approximately five-year-old machinery. For older machinery, per acre repairs and downtime cost will be \$6-10 higher, and indirect machinery costs will be lower.

¹⁰Interest is based on 6.0% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs and all the insurance/misc.

¹¹Contribution margin is the return to the unpaid operator labor/management, machinery services, and land resources.

Purdue Crop Cost & Return Guide January 2004

Table 2. Estimated Per Farm Crop Budgets For 2004 - January Estimates

Effect on Earnings for Each of Four Crop Rotations on Three Soil Types Using Similar Machinery and Labor When Farm Size is Adjusted to Permit Timely Fieldwork¹

Farm Acres Rotation	(Miami) Low Yield Soils			(Crosby) Average Yield Soils			(Brookston) High Yield Soils		
	900 c-c	1000 c-b	1200 c-b, c-w, dc	900 c-c	1000 c-b	1200 c-b, c-w	900 c-c	1000 c-b	1200 c-b, c-w
Crop contribution margin ²	\$73,800	\$126,500	\$153,000	\$99,900	\$165,000	\$194,000	\$135,900	\$218,500	\$250,200
Government payment ³	20,241	17,175	22,596	23,670	20,070	26,222	29,259	24,820	31,794
Total contribution margin	\$94,041	\$143,675	\$175,596	\$123,570	\$185,070	\$220,222	\$165,159	\$243,320	\$281,994
Annual overhead costs:									
Machinery replacement ⁴	45,000	48,500	49,000	48,600	52,100	52,100	54,000	57,500	58,000
Drying/handling	6,300	6,300	6,300	7,200	7,200	7,200	8,100	8,100	8,100
Family and hired labor ⁵	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000	37,000
Land ⁶	\$92,700	\$103,000	\$123,600	\$115,200	\$128,000	\$153,600	\$141,300	\$157,000	\$188,400
Earnings or (losses)	\$ (86,959)	\$ (51,125)	\$ (39,804)	\$ (84,430)	\$ (39,230)	\$ (29,678)	\$ (75,241)	\$ (16,280)	\$ (9,006)
									\$ 13,494

¹Rotations are as follows: c-c = 900 acres continuous corn; c-b = 500 acres rotation corn - 500 acres soybeans; c-b, c-w = 400 acres corn - 400 acres soybeans plus 200 acres corn - 200 acres wheat; c-b, c-w, dc = 400 acres corn - 400 acres soybeans plus 200 acres corn - 200 acres wheat, double crop beans (dc).

²Crops contribution margin is per acre contribution margin from Table 1 times number of acres.

³Government payment includes the direct payment and the counter cyclical payment. The per bushel direct payment rate is \$0.28 for corn, \$0.44 for soybeans, and \$0.52 for wheat. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Direct payment yields for wheat were 45.8, 49.3, 55.5 on low, average, and high soils. The counter cyclical payments were based on a target price of \$2.63 for corn, \$5.80 for soybeans, and \$3.92 for wheat. The average marketing year price assumed was \$2.36 for corn, \$6.40 for soybeans, and \$3.85 for wheat. The counter cyclical yields for corn were 108.1, 133.4, and 164.1 for low, average, and high soils. The counter cyclical yields for soybeans were 36.2, 44.7, and 55.0 for low, average and high soils. The counter cyclical yields for wheat were 59.5, 66.7, 73.8 for low, average, and high soils. A base acre of each acre of crop raised was assumed.

⁴The same basic machinery set, which is timely for each rotation, is used on all four farms of the same soil type. A no-till drill is added for beans, and a larger combine platform is added for double-crop beans. Average annual replacement costs were calculated using the Purdue Machinery Cost Calculator for timely set of fall plow or chisel tillage. Replacement costs for no-till are about 75% of fall chisel tillage. Seven-year trading policy assumed for combine and planter, 10-year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well drained soils where more days are suitable for spring field work, machinery costs could be lower.

⁵Labor expenses include a family living withdrawal of \$24,139 (\$48,855 of family living expenses less \$24,716 in net nonfarm income reported by Illinois Farm Business Farm Management Association records in 2002) and \$12,000 for part-time hired labor.

⁶Based on cash rent at \$103 per acre on low yield soil, \$128 per acre on average yield soil, and \$157 per acre on high yield soil.

Prepared by W. Alan Miller and Craig L. Dobbins
Department of Agricultural Economics, Purdue University

Purdue University is an equal opportunity/equal access institution.

Comparison of U.S. Government Payments

	1997	1998	1999	2000	2001	2002	2003	2004
Total Gov't Pymts (1)	265,132,000	468,917,000	852,051,000	938,464,000	925,278,000	318,968,000 (4)	430,147,000 (4)	526,605,000 (4)
Cropland Acres (2)	12,848,950	12,848,950	12,848,950	12,848,950	12,848,950	12,848,950	12,909,002	12,909,002
Pymt Per Acre	20.63	36.49	66.31	73.04	72.01	24.82	33.32	40.79
Table 1 Estimates (3)	45.00	53.00						

Source:

IASS - Page 8 (1)
Ag. Stats. 04-05

IASS - Page 105 (2)
Ag. Stats. 04-05
Ag. Stats. 02-03

Doster/Huie Paper (3)
Dated June 24, 1999

Less Milk Income Loss Pymt.
IASS - Page 8
Ag. Stats. 04-05 (4)

INDIANA



AGRICULTURAL STATISTICS
2004-2005

FARM INCOME

U.S. GOVERNMENT PAYMENTS, BY PROGRAM INDIANA, 1999-2004 1/

Program	1999	2000	2001	2002	2003	2004
Thousand Dollars						
Production Flexibility Contracts	207,580	203,645	162,777	144,953	(9,979)	(143)
Direct Payments 2/	---	---	---	13,875	317,368	232,557
Counter-cyclical Program Payments	---	---	---	---	27,053	23,742
Loan Deficiency Payments	306,400	362,103	407,830	76,710	2,631	208,965
Milk Income Loss Payments 3/	---	---	---	13,814	16,138	3,025
Conservation 4/	26,597	29,528	42,294	49,938	50,209	54,185
Supplemental Funding 5/	258,462	298,183	271,997	10,858	42,159	1,756
Miscellaneous 6/	10,500	291	130	28	(39)	(90)
Marketing Loan Gains	42,513	44,714	40,249	22,605	746	5,633
Total	852,051	938,464	925,278	332,782	446,285	529,630

1/ Amounts include only cash payments made directly to farmers.
 2/ Direct Payments are authorized by the Farm Security and Rural Investment Act of 2002 for 2002 through 2007 crops. Direct Payments for the 2002 crops are reduced by the amount of fiscal year 2002 payment received under Production Flexibility Contracts. The Act also increases the number of crops authorized to receive Direct Payments.
 3/ Program authorized by the Farm Security and Rural Investment Act of 2002.
 4/ Includes amount paid under Conservation Reserve, Agriculture Conservation, Emergency Conservation, and Great Plains Program.
 5/ Accounts for the supplemental funding provided by the Agricultural Risk Protection Act of 2000, Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act 2001 and Agricultural Economic Assistance Act 2001. Some of these programs include; Crop Disaster Program, Dairy Disaster Assistance Program, Livestock Emergency Assistance program, Quality Losses Program, and Tobacco Disaster Assistance Program
 6/ Miscellaneous Programs include; Forestry Incentive Annual, Dairy Indemnity, Interest Payments, Disaster Program Payments, Payment Limitation Refund, Noninsured Assistance, Disaster Reserve, and Environment Quality Incentives.

Source: Economic Research Service

FARM BUSINESS DEBT INDIANA, DECEMBER 31, 1998-2003

Item	1998	1999	2000	2001	2002	2003
Million Dollars						
Total Farm Debt 1/	5,276.0	5,405.0	5,655.0	5,916.0	6,199.0	6,390.7
Real Estate	3,230.2	3,400.4	3,526.2	3,708.1	3,978.9	4,162.9
Farm Credit System	890.5	940.2	981.2	1,085.8	1,249.7	1,325.0
Farmers Service Agency	101.9	96.1	92.1	90.5	86.0	77.0
Commercial Banks	1,125.0	1,231.5	1,328.7	1,387.9	1,476.2	1,568.5
Life Insurance Companies	306.9	328.3	328.0	332.5	338.9	344.1
Individuals and Others	805.9	804.3	796.1	811.4	828.1	848.4
Nonreal Estate	2,045.8	2,004.6	2,128.8	2,208.0	2,220.1	2,227.8
Farm Credit System	442.3	401.3	403.8	465.4	477.6	486.4
Farmers Service Agency	62.9	62.7	60.6	59.0	56.5	54.1
Commercial Banks	982.7	963.2	1,044.8	1,048.8	1,032.9	1,014.2
Individuals and Others	557.9	577.4	619.6	634.8	653.1	673.1

1/ Excludes debt for nonfarm purposes.

Source: Economic Research Service

COUNTY HIGHLIGHTS

COUNTY HIGHLIGHTS

The following pages of county statistics represent the results of a survey of over 11,000 farm operators following the 2004 harvest season. In addition to these data are selected items of interest from the 2000 U.S. Population Census, 2002 Census of Agriculture, and 2003 Cash Receipts information from the Bureau of Economics Analysis. The County Highlights' section summarizes the importance of agriculture to each and every Indiana county while comparing the magnitude of importance across counties.

Planted acreage for hay and tobacco are represented by three dashes because these categories are not estimated, planted acreage and yield for popcorn are represented by three dashes because these categories are not surveyed; in all other places the three dashes represent zero for that county. An asterisk signifies that the county has data for this item, but it cannot be disclosed for confidentiality purposes. The 2002 Chicken data from Census includes only layers twenty weeks old and older.

Below is a list of comparable items at the state level.

STATE DATA

2000 Census Population	6,080,485
2002 Total Land Area (acres)	22,945,817
2002 Number of Farms	60,296
2002 Land in Farms (acres)	15,058,670
2002 Average Size of Farm (acres)	250

2002 Value of Land & Bldgs (avg/acre)	\$2,567
2002 Cropland (acres)	12,909,002
2002 Harvested Cropland (acres)	11,937,370
2002 Pastureland, all types (acres)	1,098,301
2002 Woodland (acres)	1,153,779

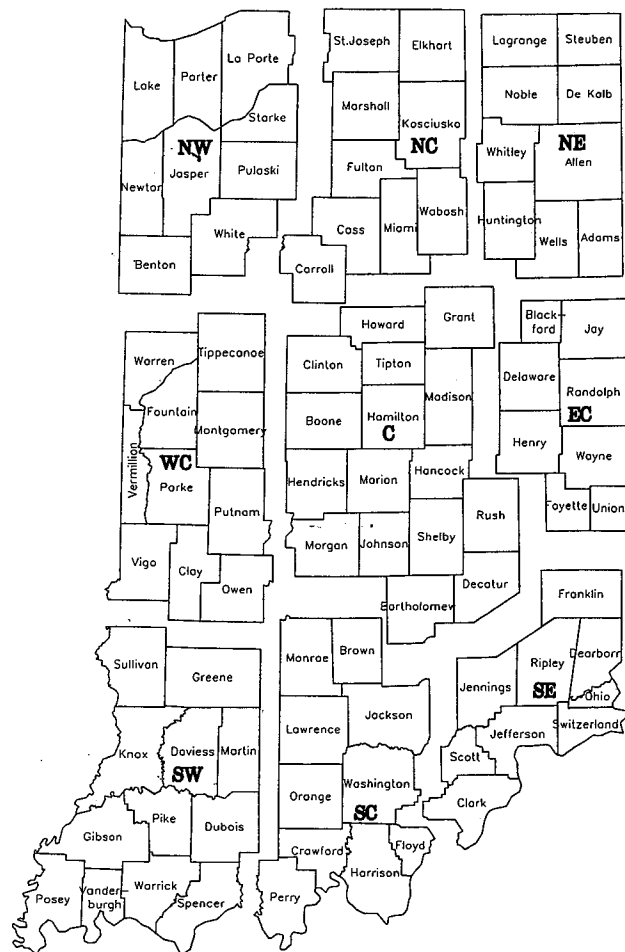
2003 Cash Receipts	\$5,142,082,000
Crop Receipts	\$3,192,071,000
Livestock Receipts	\$1,950,011,000

2003 Other Income	\$694,312,000
Government Payments	\$446,374,000
Imputed Income/Rent Received	\$247,938,000

2003 Total Income	\$5,836,394,000
Less: Production Expenses	\$5,319,439,000
Realized Net Income	\$516,955,000

2004 CROPS	PLTD	HARV	YLD	UNIT	PROD
Corn	5,700,000	5,530,000	168	Bu	929,040,000
Soybeans	5,500,000	5,520,000	52	Bu	287,040,000
Wheat	450,000	440,000	62	Bu	27,280,000
Hay	---	660,000	3.49	Ton	2,303,000
Tobacco	---	4,200	2050	Lbs	8,610,000
2002 Popcorn	---	69,207	---	Lbs	219,836,706

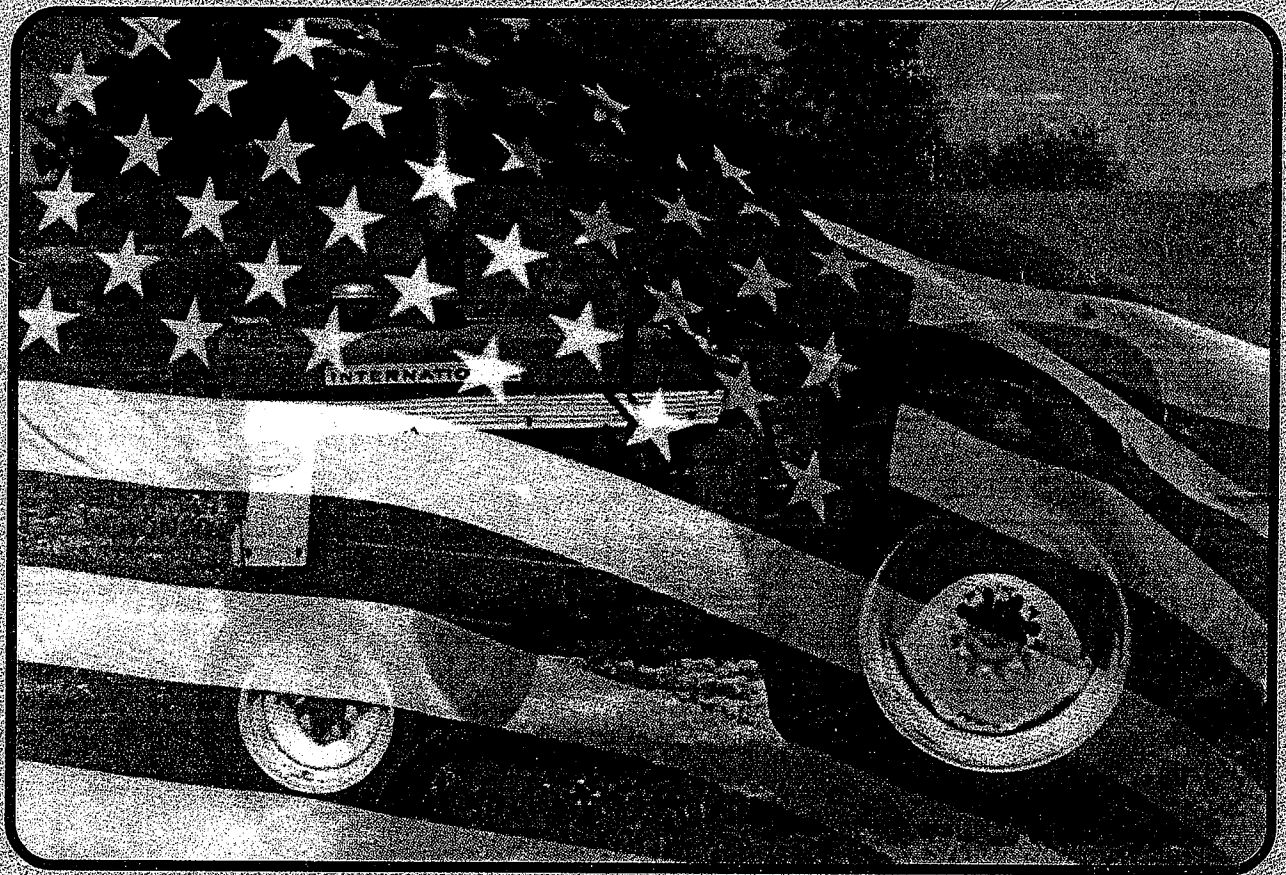
LIVESTOCK	NUMBER HEAD
Jan 2005 All Cattle	850,000
Beef Cows	230,000
Milk Cows	155,000
2002 All Hogs	3,478,570
2002 All Sheep	61,620
2002 Chickens	21,952,110
2002 Turkeys	3,848,054



INDIANA

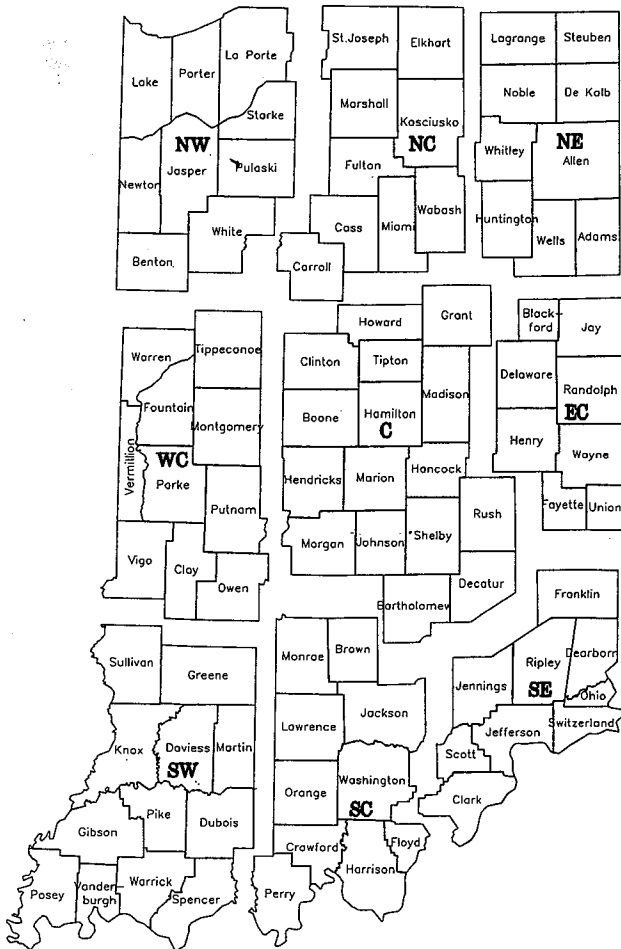
AGRICULTURAL STATISTICS 2002-2003

*James
R. Farmer*



"The American Farmer"

COUNTY HIGHLIGHTS



COUNTY HIGHLIGHTS

The following pages of county statistics represent the results of a survey of over 11,000 farm operators following the 2002 harvest season. In addition to these data are selected items of interest from the 2000 U.S. Population Census, 1997 Census of Agriculture, and 2001 Cash Receipts information. The County Highlights' section summarizes the importance of agriculture to each and every Indiana county while comparing the magnitude of importance across counties.

Planted acreage for hay and tobacco are represented by three dashes because these categories are not estimated, planted acreage and yield for popcorn are represented by three dashes because these categories are not surveyed; in all other places the three dashes represent zero for that county. An asterisk signifies that the county has data for this item, but it cannot be disclosed for confidentiality purposes. The 1997 Chicken data from Census includes only layers and pullets thirteen weeks old and older.

Below is a list of comparable items at the state level.

STATE DATA

2000 Census Population	6,080,485
1997 Total Land Area (acres)	22,956,877
1997 Number of Farms	57,916
1997 Land in Farms (acres)	15,111,022
1997 Average Size of Farm (acres)	261
1997 Value of Land & Bldgs (avg/acre)	\$2,064
1997 Cropland (acres)	12,848,950
1997 Harvested Cropland (acres)	11,716,704
1997 Pastureland, all types (acres)	1,254,525
1997 Woodland (acres)	1,283,246

2001 Cash Receipts	\$5,228,584,000
Crop Receipts	\$3,207,211,000
Livestock Receipts	\$2,021,373,000
2001 Other Income	\$1,466,664,000
Government Payments	\$938,464,000
Imputed Income/Rent Received	\$541,386,000
2001 Total Income	\$6,695,248,000
Less: Production Expenses	\$6,212,167,000
Realized Net Income	\$483,081,000

2002 CROPS	PLTLD	HARV	YLD	UNIT	PROD
Corn	5,400,000	5,220,000	121	Bu	631,620,000
Soybeans	5,800,000	5,750,000	41	Bu	235,750,000
Wheat	350,000	330,000	53	Bu	17,490,000
Hay	---	600,000	2.66	Ton	1,596,000
Tobacco	---	4,000	2000	Lbs	8,000,000
1997 Popcorn	---	78,519	---	Lbs	214,059,865

LIVESTOCK	NUMBER HEAD
Jan 2003 All Cattle	860,000
Beef Cows	230,000
Milk Cows	145,000
1997 All Hogs	3,972,060
1997 All Sheep	54,227
1997 Chickens	22,731,425
1997 Turkeys	4,758,760

AN OVERVIEW OF HOW THE CALENDAR IS USED IN CALCULATING THE AG LAND BASE RATE

<u>SPRING, 2005</u>	<u>SUMMER, 2005</u>	<u>FALL, 2005</u>	<u>WINTER, 2005</u>	<u>SPRING, 2006</u>	<u>SUMMER, 2006</u>
Planting 2005 crops	Care for 2005 crops	Harvest 2005 crops	Prep equipment for storage	Planting 2006 crops	Care for 2006 crops
Sell a portion of his 2004 crops	Sell remainder of his 2004 crops	Sell a portion of his 2005 crops	Sell a portion of his 2005 crops	Sell a portion of his 2005 crops	Sell remainder of his 2005 crops
Paying 3/1/04 Property Taxes		Paying 3/1/04 Property Taxes		Paying 3/1/05 Property Taxes	
Collect portion of 2005 Cash Rent		Collect remainder of 2005 Cash Rent		Collect portion of 2006 Cash Rent	

CASH RENT INCOME - CALENDAR YEAR

OPER. INCOME -
1/3 NOVEMBER
GRAIN PRICES

OPERATING INCOME - 1/3 MARKET YEAR AVERAGE OF GRAIN PRICES

OPERATING INCOME - 1/3 CALENDAR YEAR AVERAGE OF GRAIN PRICES